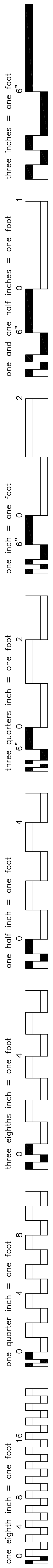


Check Valves
VA Specifications –
Chilled Water – Hydronic Piping – 232113
Steam and Condensate– 232213

Valve No.	Size	Service	Type	Connection
CKV–1	2"	Condensate	Swing	2" N.P.T. Screwed

Valves
VA Specifications –
Chilled Water – Hydronic Piping – 232113
Steam and Condensate– 232213

Size	Service	Valve Type	Rating	Connections	Body Material	Seats/ Seals	Remarks
1/2"	Chilled Water	Ball	600# WOG	N.P.T.	Bronze	RPTFE	Vent/Drain Valves
1/2"	Chilled Water	Ball	600# WOG	N.P.T.	Bronze	RPTFE	PI Valves
3"	Hot Water heating	Gate	300# WOG	flanged	Bronze	Stainless Steel	Isolation Valves
3"	Chilled Water	Gate	300# WOG	flanged	Bronze	Stainless Steel	Isolation Valves
3/4"	Chilled Water	Gate	300# WOG	N.P.T.	Bronze	Stainless Steel	DRAIN Valves
1 1/4"	Condensate	Gate	300# WOG	N.P.T.	Bronze	Stainless Steel	Isolation Valves
1"	Chilled Water	Ball	300# WOG	N.P.T.	Bronze	RPTFE	Isolation Valves
2 1/2"	Clean Steam	Gate	300# WOG	N.P.T.	Bronze	Stainless Steel	Isolation Valves
4"	Clean Steam	Gate	300# WOG	flanged	Bronze	Stainless Steel	Isolation Valves

Note: All valves to have the capability to be locked.

Strainers
VA Specifications –
Steam and Condensate– 232213

Strainer No.	Qty.	Size	Service	Type	Connection	Screen Perforation Size (in.)	Body Material	Screen Material	Blow–off Valve	Manufacturer
ST–1	1	2 1/2"	Chilled Water	Y–Type With Basket Strainer	flanged	0.0625	Cast Iron ASTM A 126 B	Stainless Steel 18–8	1/4" NPT Ball Valve	Mueller Series #752 or Approved Equal
ST–2	2	1 1/4"	Condensate	Y–Type With Basket Strainer	N.P.T.	0.033	Bronze ASTM B62	Stainless Steel ASTM A240	1/4" NPT Ball Valve	Mueller Series #351M or Approved Equal
ST–3	1	3"	HOT WATER HEATING	Y–Type With Basket Strainer	flanged	0.033	Bronze ASTM B62	Stainless Steel ASTM A240	1/4" NPT Ball Valve	Mueller Series #351M or Approved Equal
ST–4	1	1"	STEAM	Y–Type With Basket Strainer	N.P.T.	0.033	Bronze ASTM B62	Stainless Steel ASTM A240	1/4" NPT Ball Valve	Mueller Series #351M or Approved Equal
ST–5	1	1 1/2"								

Air Vent
VA Specifications –
Chilled Water – Hydronic Piping – 232113
Steam and Condensate– 232213

Max Pressure	Type	Location	Manufacturer
250#	Balanced Pressure Thermostatic Air Vent	Chilled Water Return at AHU–58 & 59	Spirax–Sarco Model VS204 or Approved Equal
250#	Balanced Pressure Thermostatic Air Vent	HOT WATER HEATING VAV AND RHP	Spirax–Sarco Model VS204 or Approved Equal
15#	Thermostatic Air VENT	HOT WATER HEATING	ARMSTRONG THRUSH Model 720 or Approved Equal

Vacuum Breaker
VA Specifications –
Chilled Water – Hydronic Piping – 232113
Steam and Condensate– 232213

Max Pressure	Location	Manufacturer
210#	Steam to HX–3 and HX–4	Armstrong Model TAVB or Approved Equal

NOTES:
1. INSTALLATION CONTRACTOR SHALL PROCURE, CONSTRUCT AND COMMISSION AND INSTALL REQUIRED ADDITIONAL AUXILIARIES THAT ARE NOT LISTED HERE AND FOLLOW MANUFACTURERS RECOMMENDATIONS FOR A FULLY FUNCTIONAL SYSTEM.

2. CONTRACTOR SHALL ACQUIRE THE SERVICES OF A MANUFACTURER REPRESENTATIVE TO VERIFY THE COMPLETENESS OF THE LISTED EQUIPMENT WITH REQUIRED AUXILIARIES.

Gauges
VA Specifications –
Chilled Water – Hydronic Piping – 232113
Steam and Condensate– 232213

Service	Type	Connection	Range	Figure Intervals	Grad. Marks	Case Material	Dial Size	Tube Type
Chilled Water	General service pressure gauge– grade 2A	1/2" N.P.T. male–bottom brass	0–100 PSI	10PSI	1PSI	Aluminum	4 1/2"	Bronze Bourdon
Hot Water	General service pressure gauge– grade 2A	1/2" N.P.T. male–bottom brass	0–100 PSI	10PSI	2PSI	Aluminum	6"	Bronze Bourdon
Steam	Corrosive service pressure gauge– grade 2A	1/2" N.P.T. male–bottom type 316 S.S.	0–60 0–100 0–150 PSI	10PSI	2PSI	Stainless Steel	4 1/2"	Type 316 Stainless Steel Bourdon tube
Chilled Water	Thermometer general service	1/2" N.P.T. male–bottom Brass	0–100°F	5 Degrees	2 Degrees	Aluminum	6"	Mercury Liquid–filled type

BIDDING DOCUMENTS
FULLY SPRINKLERED

Revisions:	Date:
BIDDING DOCUMENTS	03/27/2013

VA Northern Indiana
Health Care System,
Fort Wayne
2121 Lake Ave., Fort Wayne
IN 46805

CONSULTANTS:

USFin Development, LLC
1105 West Weir Street
Litchfield, Illinois 62056

Viridian Architectural Design, Inc.
2020 East Washington Blvd., Suite 200
Fort Wayne, Indiana 46803

ARCHITECT/ENGINEERS:

AMERICAN STRUCTUREPOINT INC.
7260 SHADELAND STATION
INDIANAPOLIS, IN 46256-3957
TEL 317.547.5580 FAX 317.543.0270
www.structurepoint.com

EnerTronics
ENERGY TO EXCEL
Engineering Corporation
The Fairmont Building
9245 Calumet Ave. Suite 205,
Munster, IN 46321
(219) 836-2120 Fax (219) 836-1129

Approved: Medical Center Director
NAME: ________________
SIGNATURE: ________________

Approved: Medical Center Associate Director
NAME: ________________
SIGNATURE: ________________

Drawing Title
MECHANICAL SCHEDULES
SHEET 4 OF 4

Approved: Engineering Service
NAME: ____________________ SIGNATURE: ________________

Approved: Project Director
NAME: ____________________ SIGNATURE: ________________

Project Title
Renovate First Floor East Wing
for PACT

Location
2121 Lake Ave., Fort Wayne, IN 46805

Date
03/27/2013

Checked
DR

Drawn
DS

Project Number
610A4-12-107

Building Number
01

Drawing Number
MH-605
Dwg. 41 of 58

Office of
Construction
and Facilities
Management

Department of
Veterans Affairs

VA FORM 08–6231

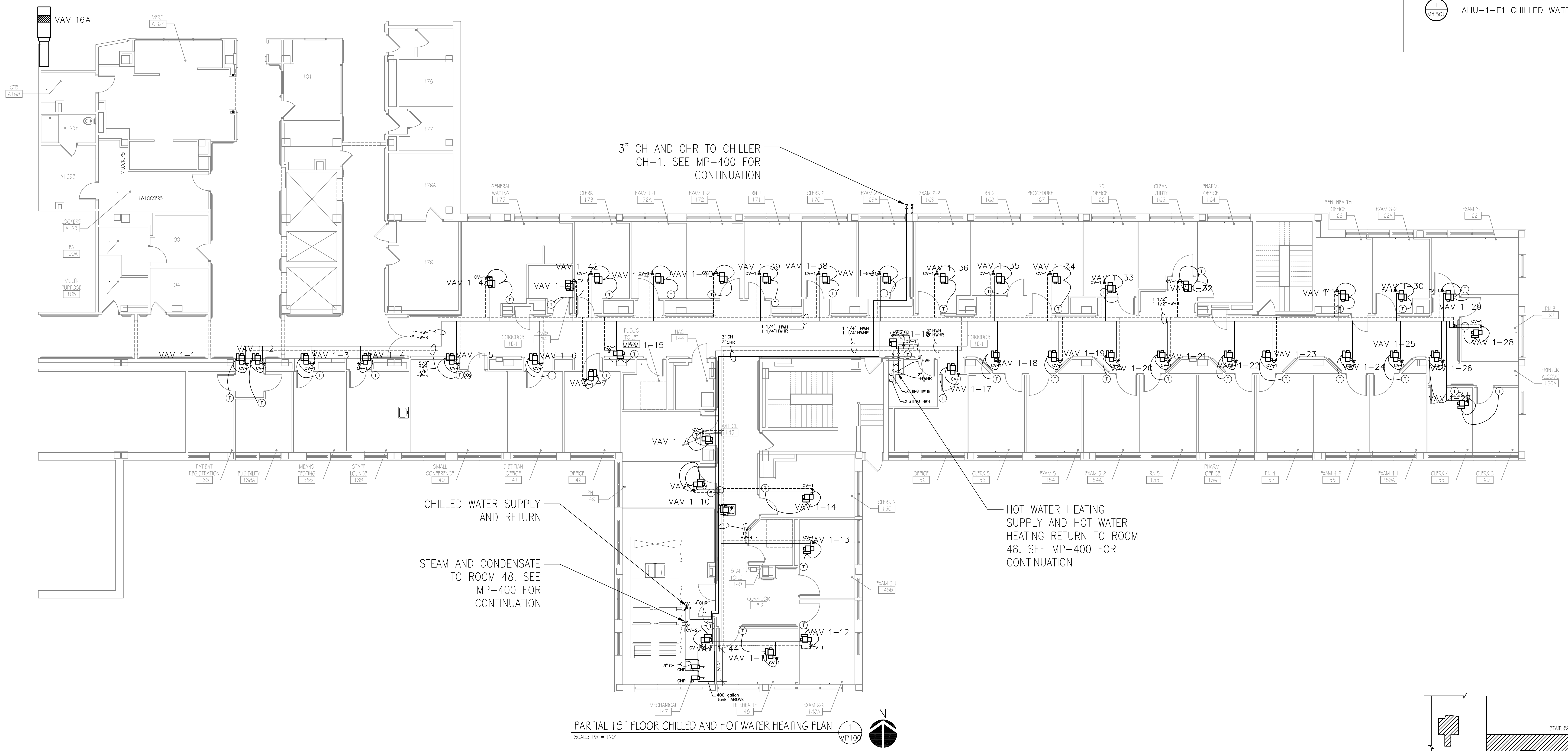
GENERAL NOTES

1 * SEE SHEET EP-601 FOR ELECTRICAL PANELBOARD SCHEDULES THAT WILL POWER VAV CONTROLLERS. WORK TO BE DONE BY MECHANICAL CONTRACTOR.

2. Ⓣ ROOM TEMPERATURE SENSORS TO BE POWERED THROUGH A NETWORK CONTROLLER FEED TO A NETWORK CONTROL BOX. SEE MI-600 AND 601 HVAC CONTROL DIAGRAM FOR VAV AND ROOM TEMPERATURE SENSOR WIRING FOR MORE INFORMATION.

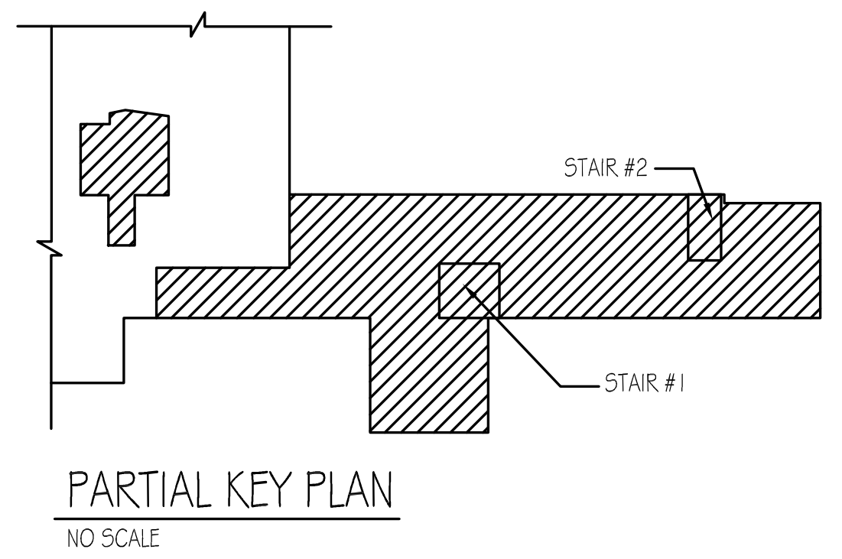
DETAIL REFERENCE

1/MH-500	VAV #-# PIPING CONNECTIONS
7/MH-500	HIGH AND LOW POINT VENTS
1/MH-502	HU-1 CLEAN STEAM PIPING CONNECTIONS
1/MH-501	AHU-1-E1 CHILLED WATER PIPING CONNECTIONS



PARTIAL 1ST FLOOR CHILLED AND HOT WATER HEATING PLAN 1/MP100

SCALE: 1/8" = 1'-0"



PARTIAL KEY PLAN

NO SCALE

BIDDING DOCUMENTS
FULLY SPRINKLERED

BIDDING DOCUMENTS	03/27/2013
Revisions:	Date:

VA Northern Indiana Health Care System, Fort Wayne
2121 Lake Ave., Fort Wayne
IN 46805

CONSULTANTS:

USFin Development, LLC
1105 West Weir Street
Litchfield, Illinois 62056

Viridian Architectural Design, Inc.
2020 East Washington Blvd., Suite 200
Fort Wayne, Indiana 46803

ARCHITECT/ENGINEERS:

AMERICAN STRUCTUREPOINT INC.
7260 SHADELAND STATION
INDIANAPOLIS, IN 46256-3957
TEL 317.547.5580 FAX 317.543.0270
www.structurepoint.com

EnerTronics ENERGY TO EXCEL
Engineering Corporation
The Fairmont Building
9245 Calumet Ave. Suite 205,
Munster, IN 46321
(219) 836-2120 Fax (219) 836-1129

Approved: Medical Center Director
NAME: ______________
SIGNATURE: ______________

Approved: Medical Center Associate Director
NAME: ______________
SIGNATURE: ______________

Drawing Title
MECHANICAL CHILLED AND HOT WATER

Approved: Engineering Service
NAME: ______________ SIGNATURE: ______________

Approved: Project Director
NAME: ______________ SIGNATURE: ______________

Project Title
Renovate First Floor East Wing for PACT

Location
2121 Lake Ave., Fort Wayne, IN 46805

Date	Checked	Drawn
03/27/2013	DR	DS

Project Number
610A4-12-107

Building Number
01

Drawing Number
MP-100

Dwg. 42 of 58

Office of Construction and Facilities Management

Department of Veterans Affairs

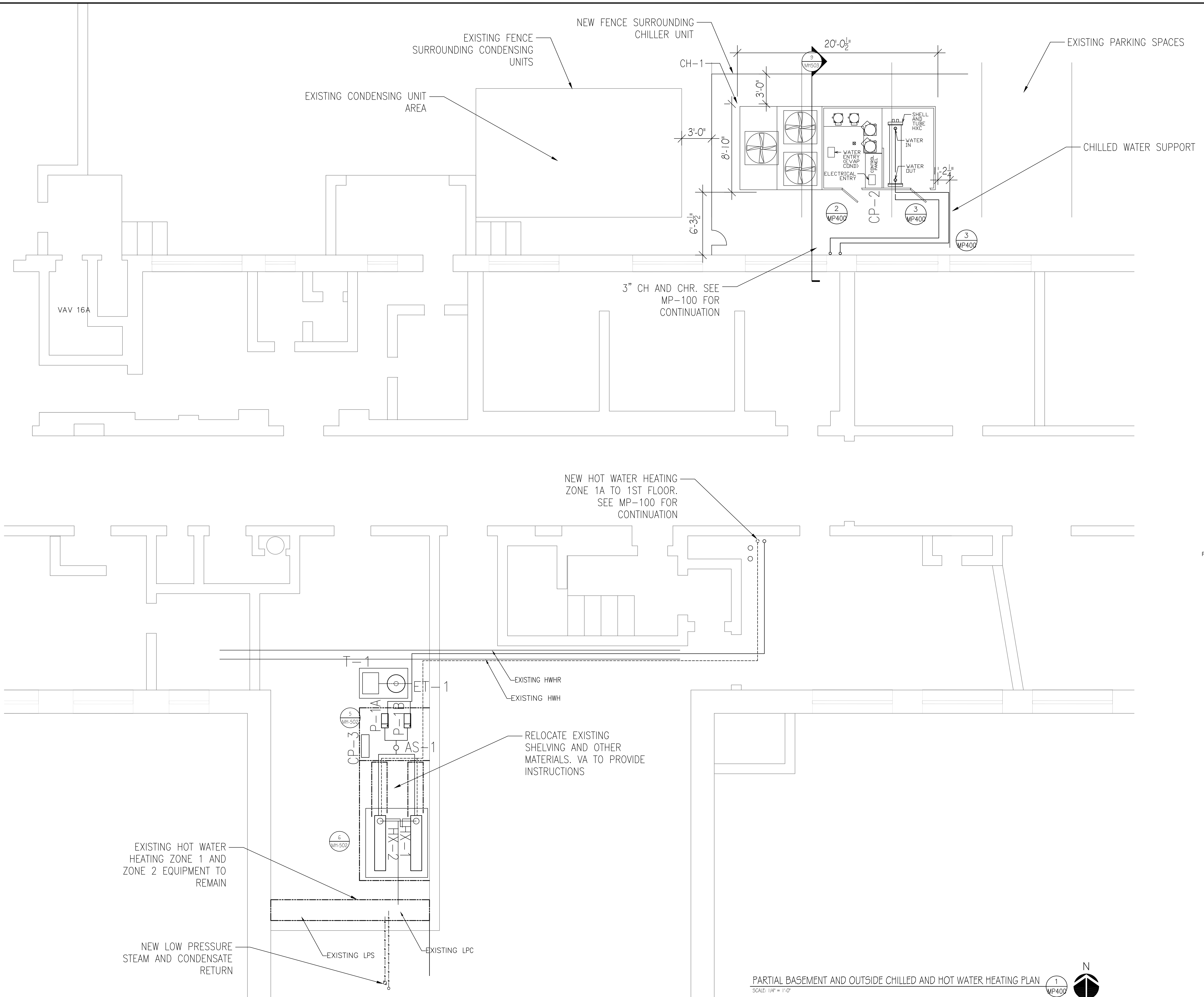
VA FORM 08-6231

GENERAL NOTES

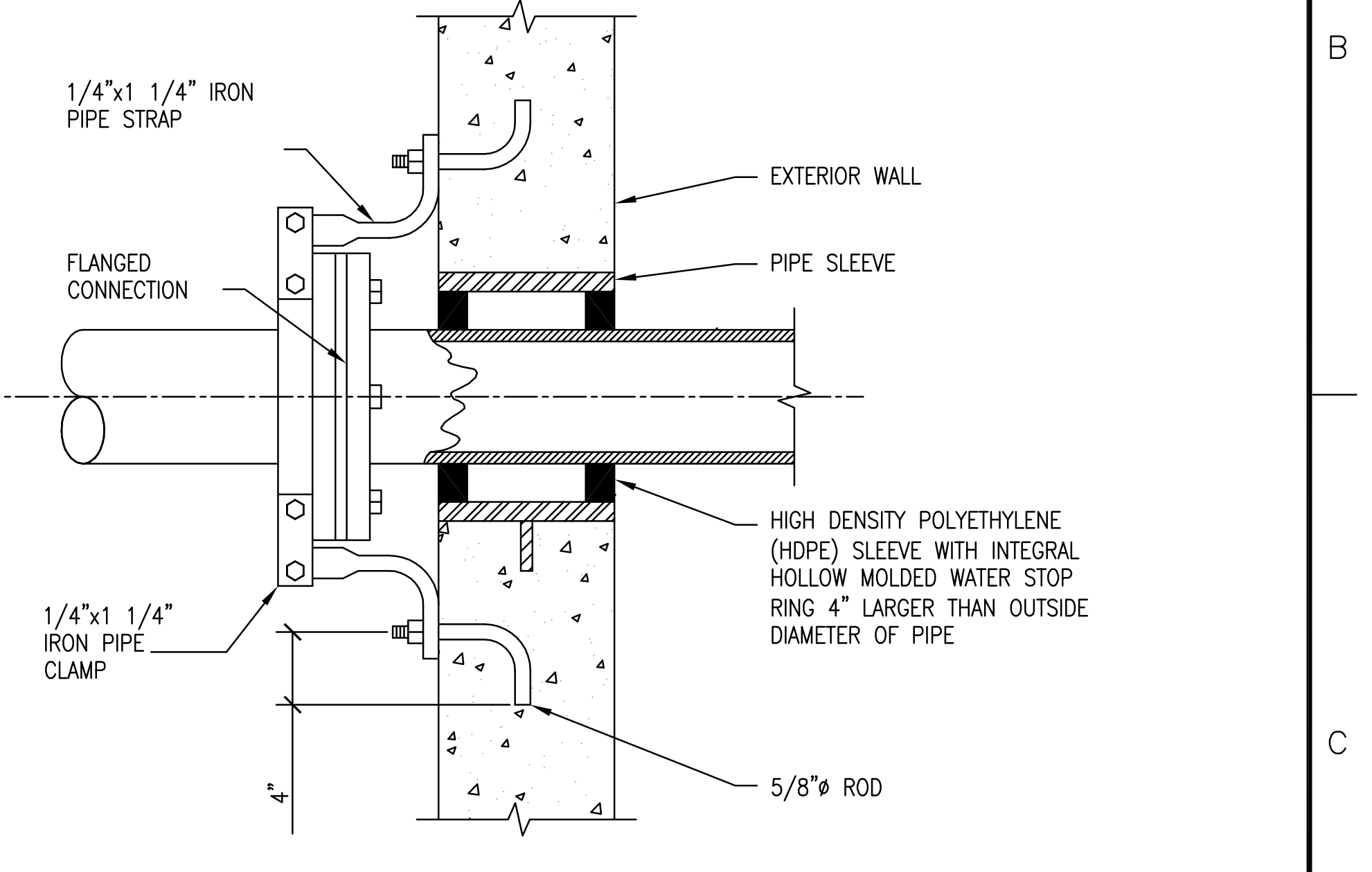
1 * SEE SHEET EP-601 FOR ELECTRICAL PANELBOARD SCHEDULES THAT WILL POWER HOT WATER HEATING PUMPS AND CHILLER CH-1.

DETAIL REFERENCE

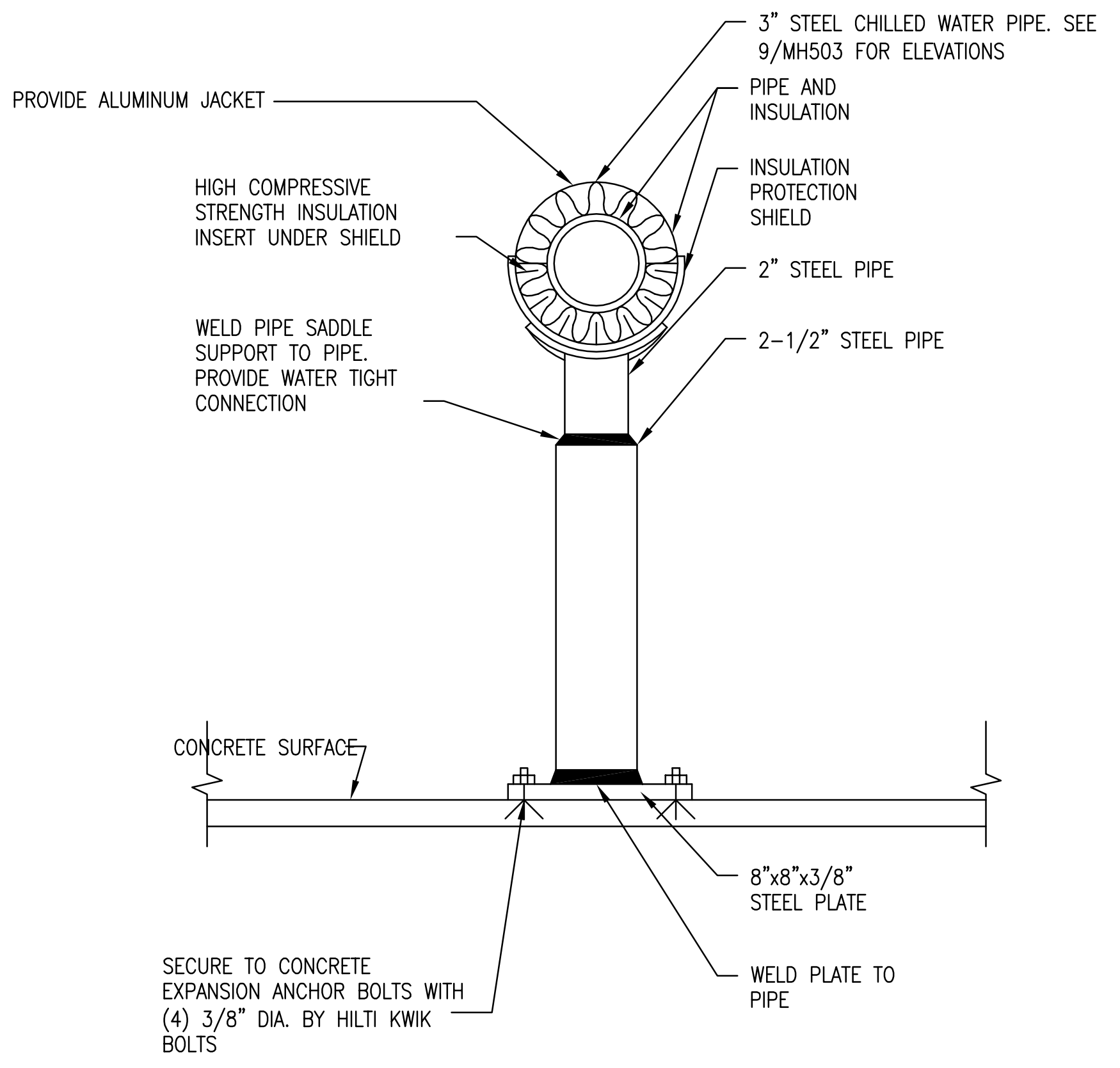
5/MH-502	HOT WATER HEATING PUMPS PIPING CONNECTIONS
6/MH-502	STEAM TO HOT WATER HEAT EXCHANGERS PIPING CONNECTIONS



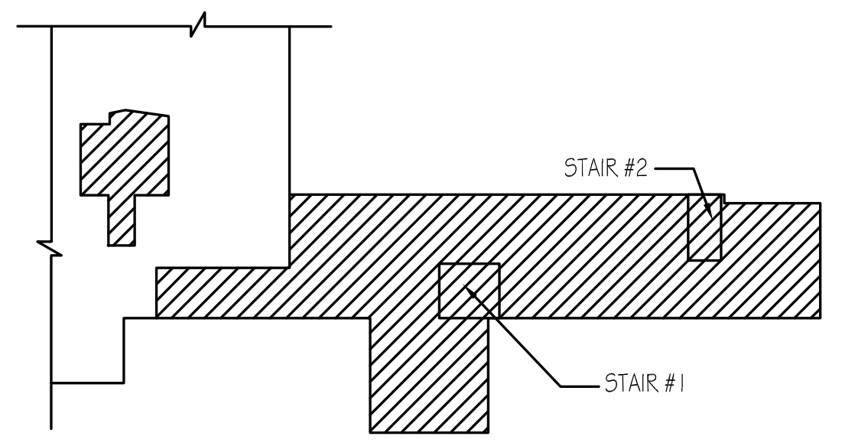
PARTIAL BASEMENT AND OUTSIDE CHILLED AND HOT WATER HEATING PLAN 1/MP400
SCALE: 1/4" = 1'-0"



OUTSIDE CHILLED WATER WALL SUPPORT DETAIL 2/MP400
SCALE: NTS



CHILLED WATER SUPPORT DETAIL 3/MP400
SCALE: NTS



PARTIAL KEY PLAN
NO SCALE

BIDDING DOCUMENTS
FULLY SPRINKLERED

BIDDING DOCUMENTS	03/27/2013
Revisions:	Date:

VA Northern Indiana Health Care System, Fort Wayne
2121 Lake Ave., Fort Wayne
IN 46805

CONSULTANTS:

USFin Development, LLC
1105 West Weir Street
Litchfield, Illinois 62056

Viridian Architectural Design, Inc.
2020 East Washington Blvd., Suite 200
Fort Wayne, Indiana 46803

ARCHITECT/ENGINEERS:

AMERICAN STRUCTUREPOINT INC.
7260 SHADELAND STATION
INDIANAPOLIS, IN 46256-3957
TEL 317.547.5580 FAX 317.543.0270
www.structurepoint.com

EnerTronics ENERGY TO EXCEL
Engineering Corporation
The Fairmont Building
9245 Calumet Ave. Suite 205,
Munster, IN 46321
(219) 836-2120 Fax (219) 836-1129

Approved: Medical Center Director
NAME: _______________
SIGNATURE: _______________

Approved: Medical Center Associate Director
NAME: _______________
SIGNATURE: _______________

Drawing Title
BASEMENT AND OUTSIDE

Approved: Engineering Service
NAME: _______________ SIGNATURE: _______________

Approved: Project Director
NAME: _______________ SIGNATURE: _______________

Project Title
Renovate First Floor East Wing for PACT

Location
2121 Lake Ave., Fort Wayne, IN 46805

Date	Checked	Drawn
03/27/2013	DR	DS

Project Number
610A4-12-107

Building Number
01

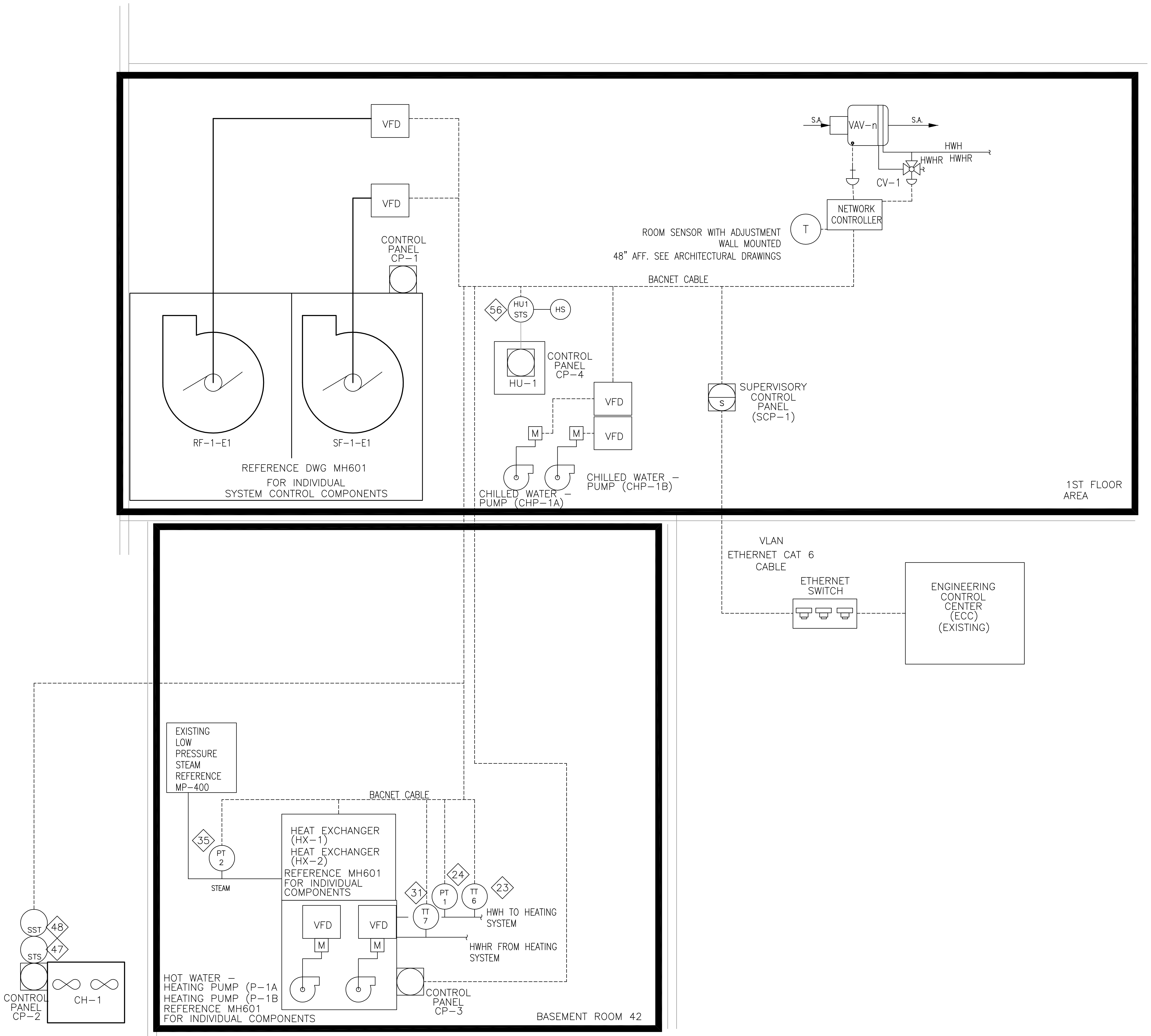
Drawing Number
MP-400

Dwg. 43 of 58

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231

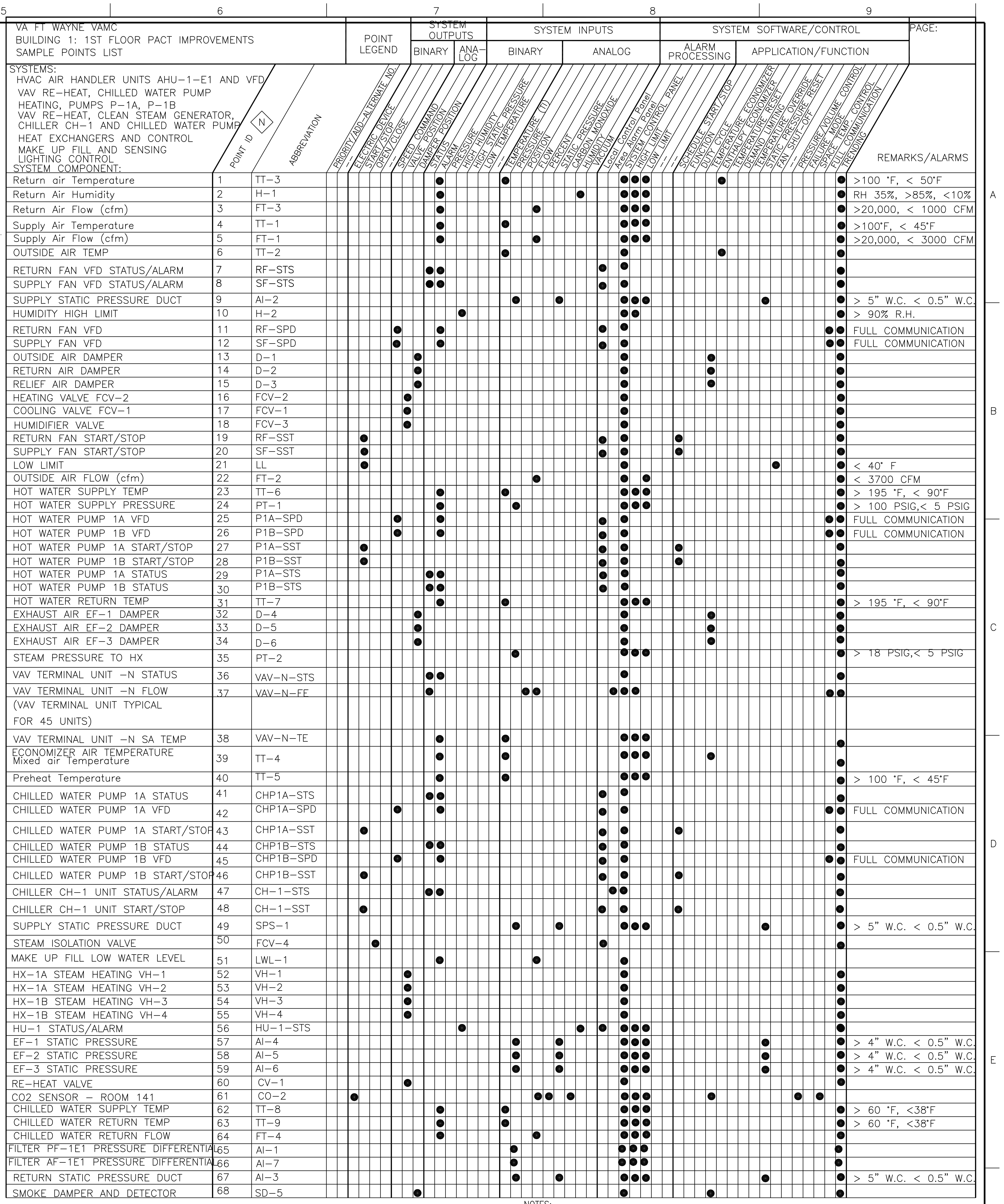
three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot



SYSTEM CONTROL DIAGRAM

1 MI600

NTS



VA FT WAYNE VAMC
BUILDING 1: 1ST FLOOR PACT IMPROVEMENTS
SAMPLE POINTS LIST

PAGE:

SYSTEMS:
HVAC AIR HANDLER UNITS AHU-1-E1 AND VFD
VAV RE-HEAT, CHILLED WATER PUMP
HEATING, PUMPS P-1A, P-1B
VAV RE-HEAT, CLEAN STEAM GENERATOR,
CHILLER CH-1 AND CHILLED WATER PUMP
HEAT EXCHANGERS AND CONTROL
MAKE UP FILL AND SENSING
LIGHTING CONTROL

SYSTEM COMPONENT:	POINT ID (N)	ABBREVIATION	REMARKS/ALARMS
Return air Temperature	1	TT-3	>100 °F, < 50°F
Return Air Humidity	2	H-1	RH 35%, >85%, <10%
Return Air Flow (cfm)	3	FT-3	>20,000, < 1000 CFM
Supply Air Temperature	4	TT-1	>100°F, < 45°F
Supply Air Flow (cfm)	5	FT-1	>20,000, < 3000 CFM
OUTSIDE AIR TEMP	6	TT-2	
RETURN FAN VFD STATUS/ALARM	7	RF-STS	
SUPPLY FAN VFD STATUS/ALARM	8	SF-STS	
SUPPLY STATIC PRESSURE DUCT	9	AI-2	> 5" W.C. < 0.5" W.C.
HUMIDITY HIGH LIMIT	10	H-2	> 90% R.H.
RETURN FAN VFD	11	RF-SPD	FULL COMMUNICATION
SUPPLY FAN VFD	12	SF-SPD	FULL COMMUNICATION
OUTSIDE AIR DAMPER	13	D-1	
RETURN AIR DAMPER	14	D-2	
RELIEF AIR DAMPER	15	D-3	
HEATING VALVE FCV-2	16	FCV-2	
COOLING VALVE FCV-1	17	FCV-1	
HUMIDIFIER VALVE	18	FCV-3	
RETURN FAN START/STOP	19	RF-SST	
SUPPLY FAN START/STOP	20	SF-SST	
LOW LIMIT	21	LL	< 40° F
OUTSIDE AIR FLOW (cfm)	22	FT-2	< 3700 CFM
HOT WATER SUPPLY TEMP	23	TT-6	> 195 °F, < 90°F
HOT WATER SUPPLY PRESSURE	24	PT-1	> 100 PSIG,< 5 PSIG
HOT WATER PUMP 1A VFD	25	P1A-SPD	FULL COMMUNICATION
HOT WATER PUMP 1B VFD	26	P1B-SPD	FULL COMMUNICATION
HOT WATER PUMP 1A START/STOP	27	P1A-SST	
HOT WATER PUMP 1B START/STOP	28	P1B-SST	
HOT WATER PUMP 1A STATUS	29	P1A-STS	
HOT WATER PUMP 1B STATUS	30	P1B-STS	
HOT WATER RETURN TEMP	31	TT-7	> 195 °F, < 90°F
EXHAUST AIR EF-1 DAMPER	32	D-4	
EXHAUST AIR EF-2 DAMPER	33	D-5	
EXHAUST AIR EF-3 DAMPER	34	D-6	
STEAM PRESSURE TO HX	35	PT-2	> 18 PSIG,< 5 PSIG
VAV TERMINAL UNIT -N STATUS	36	VAV-N-STS	
VAV TERMINAL UNIT -N FLOW	37	VAV-N-FE	
(VAV TERMINAL UNIT TYPICAL FOR 45 UNITS)			
VAV TERMINAL UNIT -N SA TEMP	38	VAV-N-TE	
ECONOMIZER AIR TEMPERATURE Mixed air Temperature	39	TT-4	
Preheat Temperature	40	TT-5	> 100 °F, < 45°F
CHILLED WATER PUMP 1A STATUS	41	CHP1A-STS	
CHILLED WATER PUMP 1A VFD	42	CHP1A-SPD	FULL COMMUNICATION
CHILLED WATER PUMP 1A START/STOP	43	CHP1A-SST	
CHILLED WATER PUMP 1B STATUS	44	CHP1B-STS	
CHILLED WATER PUMP 1B VFD	45	CHP1B-SPD	FULL COMMUNICATION
CHILLED WATER PUMP 1B START/STOP	46	CHP1B-SST	
CHILLER CH-1 UNIT STATUS/ALARM	47	CH-1-STS	
CHILLER CH-1 UNIT START/STOP	48	CH-1-SST	
SUPPLY STATIC PRESSURE DUCT	49	SPS-1	> 5" W.C. < 0.5" W.C.
STEAM ISOLATION VALVE	50	FCV-4	
MAKE UP FILL LOW WATER LEVEL	51	LWL-1	
HX-1A STEAM HEATING VH-1	52	VH-1	
HX-1A STEAM HEATING VH-2	53	VH-2	
HX-1B STEAM HEATING VH-3	54	VH-3	
HX-1B STEAM HEATING VH-4	55	VH-4	
HU-1 STATUS/ALARM	56	HU-1-STS	
EF-1 STATIC PRESSURE	57	AI-4	> 4" W.C. < 0.5" W.C.
EF-2 STATIC PRESSURE	58	AI-5	> 4" W.C. < 0.5" W.C.
EF-3 STATIC PRESSURE	59	AI-6	> 4" W.C. < 0.5" W.C.
RE-HEAT VALVE	60	CV-1	
CO2 SENSOR - ROOM 141	61	CO-2	
CHILLED WATER SUPPLY TEMP	62	TT-8	> 60 °F, <38°F
CHILLED WATER RETURN TEMP	63	TT-9	> 60 °F, <38°F
CHILLED WATER RETURN FLOW	64	FT-4	
FILTER PF-1E1 PRESSURE DIFFERENTIAL	65	AI-1	
FILTER AF-1E1 PRESSURE DIFFERENTIAL	66	AI-7	
RETURN STATIC PRESSURE DUCT	67	AI-3	> 5" W.C. < 0.5" W.C.
SMOKE DAMPER AND DETECTOR	68	SD-5	

CONTROL DIAGRAM LEGEND

○ LOCAL CONTROL PANEL FACILITY EXPLORER FX-16 INCLUDES THE FOLLOWING:
(CP-N): (REFER TO ASSOCIATED ELECTRICAL PLANS)
CP-4 CLEAN STEAM GENERATOR
CP-3 HOT WATER HEATING PUMPS (P-1A), (P-1B)
CP-2 CHILLER CH-1
CP-1 AHU-1-E1

S SYSTEM CONTROL COMPONENT

STS SUPERVISORY CONTROL PANEL (SCP-1) (REFER TO MI-601)

N SYSTEM COMPONENT POINT ID NUMBER (FOR MORE ID'S NOT SHOWN, REFER TO MI-601)

---- SIGNAL CABLE
BACNET CABLE
ETHERNET CABLE TO BE CAT 6

NOTES:

1) CONTROL SCHEMATICS INDICATES SAMPLE / GENERAL PARAMETERS TO BE DISPLAYED, MAINTAINED AND CONTROLLED. ADDITIONAL POINTS MAY BE ADDED PER VA.
2) FOR A COMPLETE LIST OF ITEMS TO BE CONTROLLED FOLLOW DRAWINGS AND SPECIFICATIONS 23 09 23 DIRECT DIGITAL CONTROL SYSTEM FOR HVAC.
3) I/O RACKS AT SUPERVISORY CONTROL PANEL (SCP-1) SHALL HAVE FUTURE ADD CAPACITY OF 100% AND CARDS TO IMPLEMENT INTO A BACnet NETWORK SYSTEM.
4) ALL CONTROLS FROM EMERGENCY 120V/208 PANELS LOCATED IN 1ST FLOOR MECHANICAL ROOM 147 SHALL BE INSTALLED AND COMMISSIONED BY HAVEL CONTRACTOR. SEE EP-100, EP-600, EP-601 FOR MORE DETAILS

BIDDING DOCUMENTS
FULLY SPRINKLERED

Revisions:	Date:
BIDDING DOCUMENTS	03/27/2013

VA Northern Indiana
Health Care System,
Fort Wayne
2121 Lake Ave., Fort Wayne
IN 46805

CONSULTANTS:
USFin Development, LLC
1105 West Weir Street
Litchfield, Illinois 62056
Viridian Architectural Design, Inc.
2020 East Washington Blvd., Suite 200
Fort Wayne, Indiana 46803

ARCHITECT/ENGINEERS:
AMERICAN STRUCTUREPOINT INC.
7260 SHADELAND STATION
INDIANAPOLIS, IN 46256-3957
TEL 317.547.5580 FAX 317.543.0270
www.structurepoint.com

EnerTronics ENERGY TO EXCEL
Engineering Corporation
The Fairmont Building
9245 Calumet Ave. Suite 205,
Munster, IN 46321
(219) 836-2120 Fax (219) 836-1129

Approved: Medical Center Director
NAME: ______________
SIGNATURE: ______________

Approved: Medical Center Associate Director
NAME: ______________
SIGNATURE: ______________

Drawing Title
SYSTEM DIRECT DIGITAL CONTROL DIAGRAMS
AND BASEMENT AND 1ST Floor
SAMPLE POINTS LIST TABLE

Approved: Engineering Service
NAME: ______________ SIGNATURE: ______________

Approved: Project Director
NAME: ______________ SIGNATURE: ______________

Project Title
Renovate First Floor East Wing
for PACT

Location
2121 Lake Ave., Fort Wayne, IN 46805

Date
03/27/2013

Checked
AMH

Drawn
DS

Project Number
610A4-12-107

Building Number
01

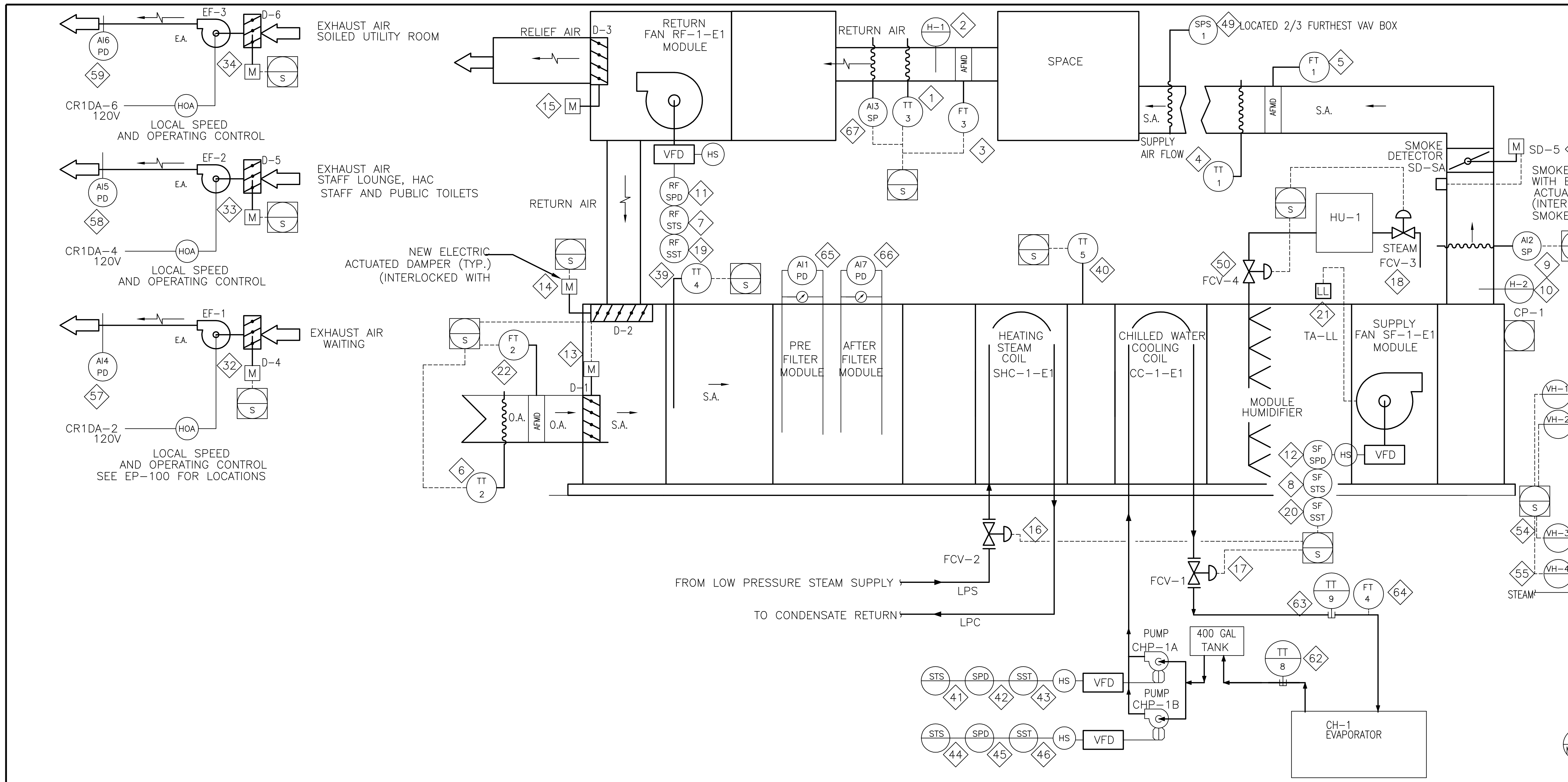
Drawing Number
MI-600

Dwg. 44 of 58

Office of
Construction
and Facilities
Management

Department of
Veterans Affairs

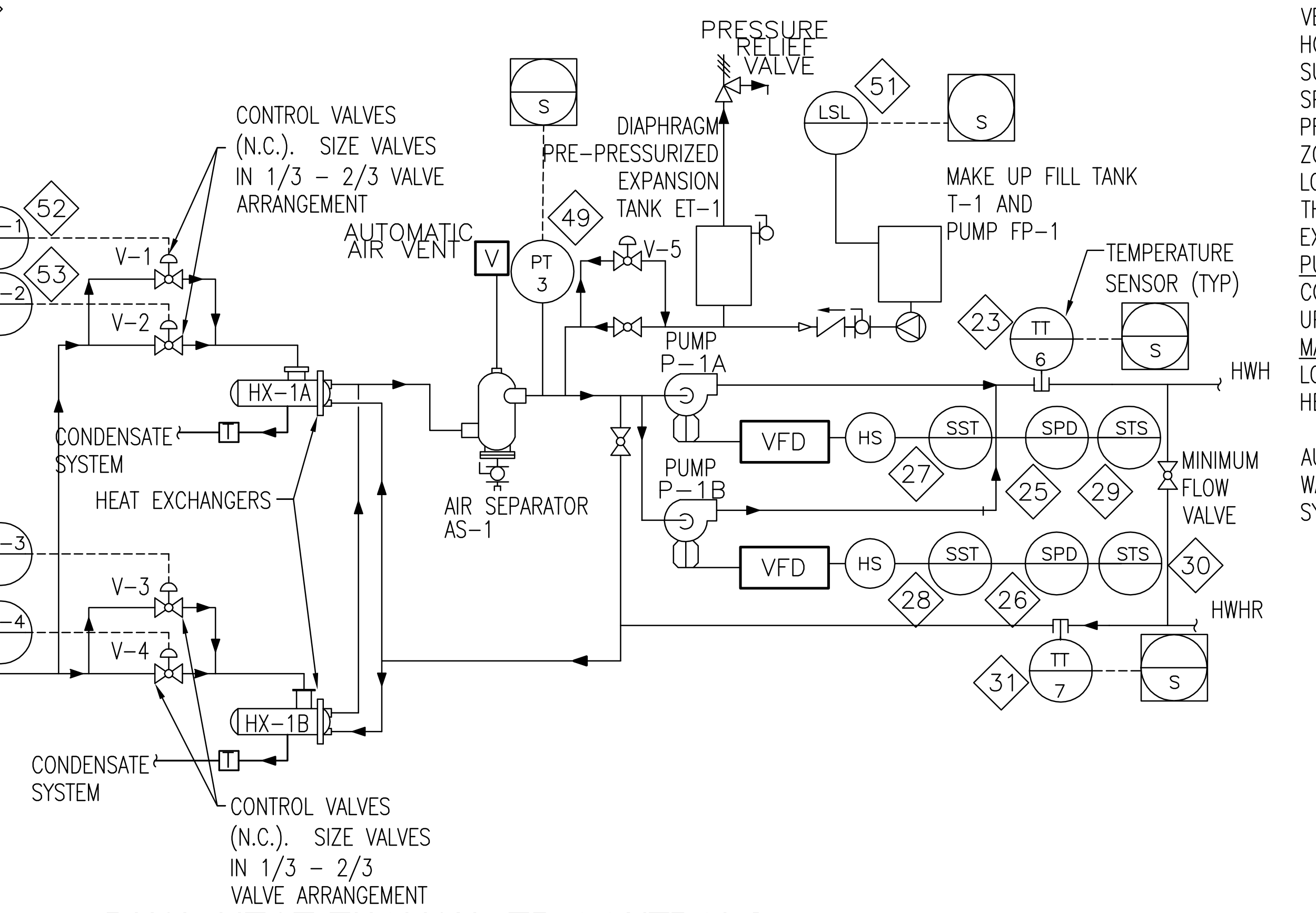
VA FORM 08-6231



1 MI601

AIR HANDLING UNIT AHU-1-E1 AND EXHAUST FANS EF-1,23

NTS CONTROL DIAGRAM



3 MI601

DUAL HEAT EXCHANGER CONTROLS (HEATING SYSTEM)

NTS

SEQUENCE OF OPERATION:

1. STEAM CONTROL VALVE SHALL MODULATE TO MAINTAIN THE LEAVING HOT WATER TEMPERATURE AT SET POINT.

2. THE LEAVING HOT WATER TEMPERATURE SHALL BE RESET INVERSELY WITH THE OUTDOOR TEMPERATURE AS SCHEDULED.

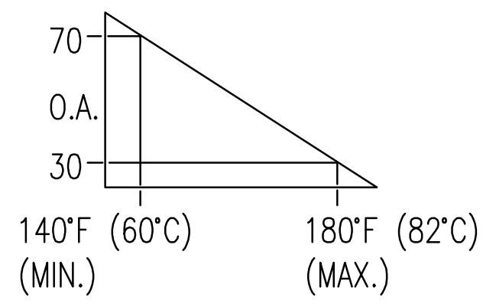
3. THE LEAD AND LAG PUMPS AND HEAT EXCHANGERS SHALL BE SEQUENTIAL BY THE OPERATOR CONTROLS AT THE PRE-DETERMINED INTERVAL (USUALLY 7 DAYS). IN THE EVENT THE PUMP FAILS TO START WITHIN 30 SECONDS, AN ALARM SHALL BE INITIATED AND THE SECOND PUMP SHALL START AUTOMATICALLY.

VALVE SEQUENCE:

1. V1 ($\frac{1}{3}$ CAPACITY) MODULATING FULLY OPEN TO MAINTAIN SET POINT

2. V2 ($\frac{2}{3}$ CAPACITY) MODULATE FULLY OPEN TO MAINTAIN SET POINT.

3. BOTH V1 & V2 MODULATE TOGETHER TO MAINTAIN SET POINT.



TYP OSA RESET SCHEDULE

SEQUENCE OF OPERATIONS AND CONTROLS

HOT WATER SYSTEM

STEAM TO HOT WATER HEAT EXCHANGERS TO SUPPLY HOT WATER AT AROUND 175 F. FOR VAV REHEAT BOXES COILS ON 1ST FLOOR.

HOT WATER DISCHARGE TEMPERATURE AT THE HEAT EXCHANGERS TO BE MAINTAINED BY TEMPERATURE CONTROL VALVES LOCATED IN THE STEAM LINES TO BE SET BETWEEN 180°F TO 140°F PER OSA RESET SCHEDULE.

TEMPERATURE SENSING PROBE AND FULL MODULATING VALVES FOR EACH OF THE HEAT EXCHANGERS. 100% MODULATING VALVES TO ALLOW BACK-UP OPERATION IN CASE THE FIRST HEAT EXCHANGER DOESN'T KEEP UP THE WITH THE DEMAND AND TEMPERATURE FALLS BY MORE THAN 5°F FROM THE SETPOINT FOR MORE THAN A MINUTE.

INCLUDE ISOLATION VALVES, SENSING LINES, TRAPS, VENTS, AS REQUIRED.

HOT WATER TO INDIVIDUAL REHEAT BOXES TO BE SUPPLIED BY A DUAL PUMP SYSTEM WITH VARIABLE SPEED DRIVE TO ADJUST FLOW BASED ON PRESSURE. REHEAT BOXES TO BE CONTROLLED BY ZONE ROOM SENSORS WITH ADJUSTABLE SETPOINTS LOCATED AT EACH ZONE. HOT WATER RETURN FROM THE ZONES TO BE RE-CIRCULATED INTO THE HEAT EXCHANGER SYSTEM.

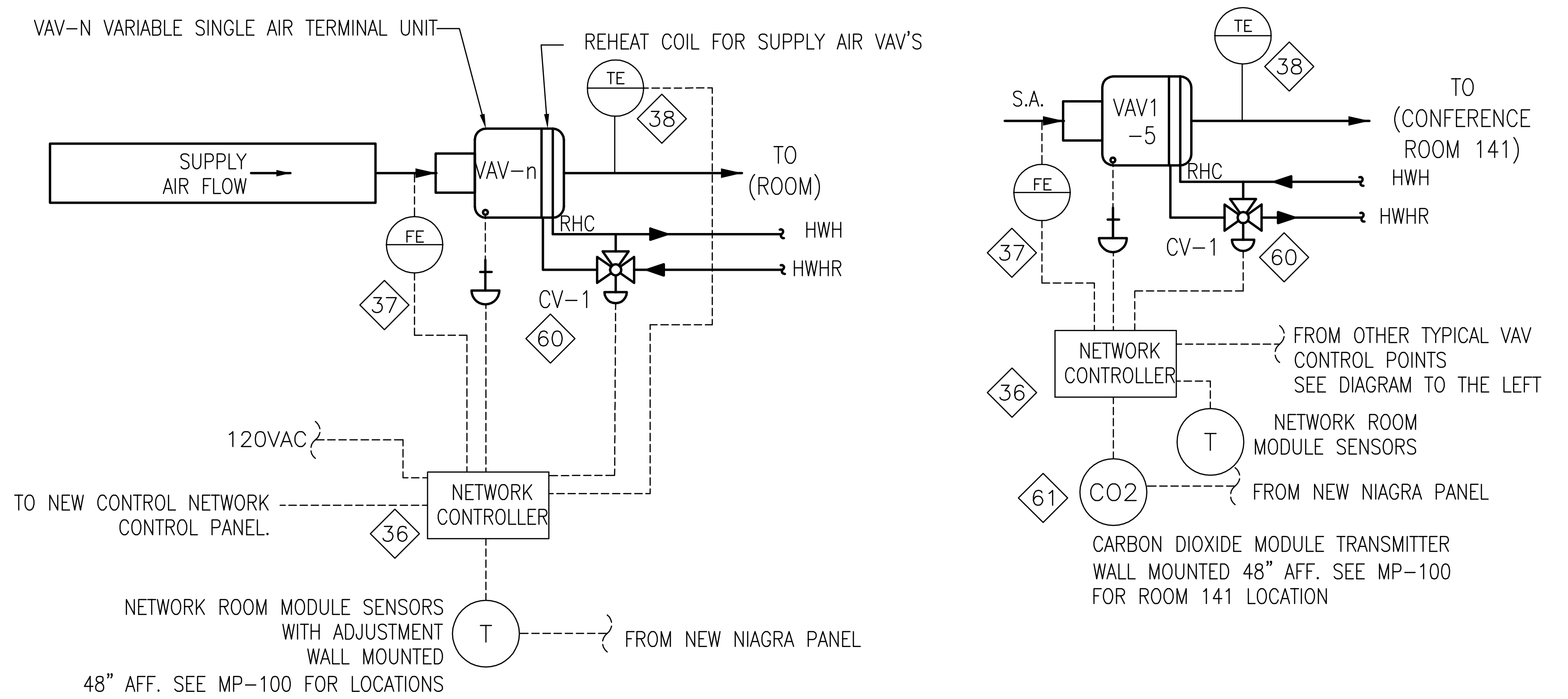
PUMP CONTROLS AND INTERLOCKS

CONTROLLER WITH STANDBY AND AUTOMATIC START UP OF SPARE PUMP

MAKE UP FILL WATER LEVEL INDICATIONS

LOW LEVEL INDICATOR FOR MAKE UP FILL TO HEATING SYSTEM SHALL BE INDICATED TO EEC.

AUTOMATIC PRESSURIZATION UNIT OF THE HOT WATER SYSTEM SHALL BE INTEGRATED BY CONTROL SYSTEM



2 MI601

TYPICAL VAV TERMINAL UNIT (VAV-N) DIAGRAM

NTS 45 PLS. SUPPLY AIR

SEQUENCE OF OPERATION FOR VARIABLE AIR VOLUME AIR HANDLING UNIT WITH MINIMUM OUTSIDE AIR

1. General

UNIT IS NORMALLY STARTED AND STOPPED REMOTELY AT THE ECC. H-O-A SWITCH SHALL BE KEPT IN THE "AUTO" POSITION. "HAND" AND "OFF" POSITIONS SHALL BE USED ONLY FOR MAINTENANCE. WHEN THE UNIT IS "OFF" D-1, D-2, D-3, SHALL BE FULLY CLOSED. WHEN THE UNIT IS "ON" D-1, D-2 AND D-3 SHALL MODULATE IN ACCORDANCE WITH THE FOLLOWING

2. Temperature Control

MIXED AIR TEMPERATURE, SENSED BY TT-1, SHALL BE MAINTAINED AT SETPOINT VIA DIGITAL CONTROL PANEL BY MODULATING CHILLED WATER CONTROL VALVE FCV-1 IN SUMMER. IN WINTER THE CHILLED WATER VALVE SHALL BE CLOSED AND THE PREHEAT TEMPERATURE CONTROL SHALL BE PERFORMED BY STEAM VALVE FCV-2. SPACE TEMPERATURE CONTROL SHALL BE PERFORMED AT VAV BOX FOR EACH SPACE.

3. Air Flow Control

SAFETY INTERLOCK

USING HIGH PRESSURE SENSOR AI-2 LOCATED AT THE SUPPLY FAN DISCHARGE, SHALL PREVENT THE RETURN FAN FROM DEVELOPING OVER 7" OF STATIC PRESSURE (FIELD ADJUSTABLE). IF STATIC PRESSURE AT SPS-2 DOES EXCEED 7" THE SUPPLY AIR FAN SHALL STOP. SPS-2 SHALL BE HARDWIRED TO THE SUPPLY FAN VSMC AND UNIT SHALL BE SHUTDOWN IN HAND,AUTO OR BYPASS MODE. SPS-2 WILL REQUIRE MANUAL RESET AT THE DEVICE.

4. Static Pressure Control

THE PRIMARY MODE OF CONTROL SHALL BE BY DUCT STATIC PRESSURE CONTROL (AI-2 AND AI-3)

4.1 RETURN DUCT STATIC PRESSURE WILL BE MAINTAINED AT SETPOINT BY MODULATING THE RETURN FAN SPEED. RETURN TO SUPPLY VOLUME DIFFERENTIAL FC*REF WILL BE MAINTAINED BY MODULATING MAKEUP AIR DAMPER AND ACCOUNT FOR THE FLOWS AT EXHAUST FANS.

5. Automatic Shutdown/restart

5.1. WHEN SMOKE IS DETECTED BY SUPPLY SMOKE DETECTOR SD*SA (existing fire dampers) THE UNIT WILL SHUT "OFF" THROUGH HARD WIRING AND SOFTWARE, AN ALARM SENT TO THE ECC, AND THE OUTDOOR AIR AND SMOKE DAMPERS WILL CLOSE. WHEN THE FIRE ALARM SYSTEM IS RESET, THE DAMPERS WILL OPEN AND THE END SWITCHES WILL ALLOW THE SUPPLY FAN TO START.

5.2. EXHAUST FANS SERVING AREA OF THE SUPPLY FAN SHALL CONTINUE TO RUN. SUPPLY FAN SHALL RESTART AND FIRE DAMPERS SHALL OPEN WHEN FIRE ALARM CIRCUIT IS RESET.

6. Emergency Constant Speed Operation

6.1. UPON FAILURE OF THE VFD, THE RETURN FANS SHALL BE STARTED/STOPPED MANUALLY AT THE DIGITAL CONTROL PANEL OR THE ECC THROUGH THE BY-PASS STARTER. FANS SHALL THEN BE OPERATED AT CONSTANT SPEED.

7. Alarms

7.1. DURING THE OCC (OCCUPIED) MODE, ALARM VALUES AND CRITICAL LEVELS WILL BE WRITTEN TO ANALOG AND BINARY OBJECTS. CONTROLLED VARIABLES ALARMS WILL TRACK SETPOINT ADJUSTMENTS. TIME DELAYS WILL ALLOW UNIT TO STABILIZE BEFORE ALARMS ARE ACTIVATED AFTER STARTUP. SEASONAL CONTROL LOOP ALARM VALUES WILL BE DELETED DURING DISABLED CONDITIONS. THESE ALARMS WILL BE REWRITTEN TO THE OBJECT DURING THE OCCUPIED CONDITIONS. I.E. HUMIDITY CONTROL LOOP, ETC.

7.2. FREEZE PROTECTION AND SMOKE DETECTOR ALARMS ARE ALWAYS ACTIVE.

7.3. DURING THE UNOCC (UNOCCUPIED) MODE, ALARM VALUES AND CRITICAL LEVELS WILL BE DELETED TO ANALOG AND BINARY OBJECTS. THIS PREVENTS NUISANCE ALARMS WHEN THE UNIT HAS BEEN COMMANDED OFF. THERE ARE SEPARATE CONTROL SYSTEMS TO INDICATE THAT AN AHU IS ACTUALLY NOT OPERATING, WITHOUT THE USE OF ALARM NOTIFICATION BOXES.

8. HUMIDITY CONTROL

RETURN (OR EXHAUST) AIR HUMIDITY SHALL BE MONITORED. ON A CALL FOR HUMIDIFICATION, HUMIDIFIER VALVE FCV-3 SHALL MODULATE TO MAINTAIN THE RETURN (OR EXHAUST) AIR HUMIDITY SET POINT TO 30% (ADJUSTABLE). PRIOR TO ACTIVATION OF FCV-3, THE ON/OFF CONTROL VALVE V-6 SHALL BE ENABLED THROUGH ECC AND JACKET TEMPERATURE SENSED BY TSH SHALL BE WARM ENOUGH TO PREVENT CONDENSATION. THE HIGH LIMIT HUMIDITY SENSOR, LOCATED IN THE SUPPLY AIR DUCT AFTER THE HUMIDIFIER SHALL DISABLE THE HUMIDIFIER AND GIVE AN ALARM SIGNAL TO THE ECC, IF THE SUPPLY AIR HUMIDITY EXCEEDS 90% RH (ADJUSTABLE). THE AIRFLOW SWITCH SHALL PROVE AIRFLOW BEFORE HUMIDITY CONTROLS ARE ACTIVATED.

9. WINTER MODE

AHU IS RATED FOR MAXIMUM SUMMER/COOLING LOAD CONDITIONS. DURING WINTER THE VAV BOXES SHALL BE SETBACK TO REDUCED FLOW RATES PER VA DIRECTIVES. WINTER REDUCED FLOWS ARE INDICATED IN TABLE MH601.

10. ENERGY CONSERVATION AND ECONOMIZING MODE

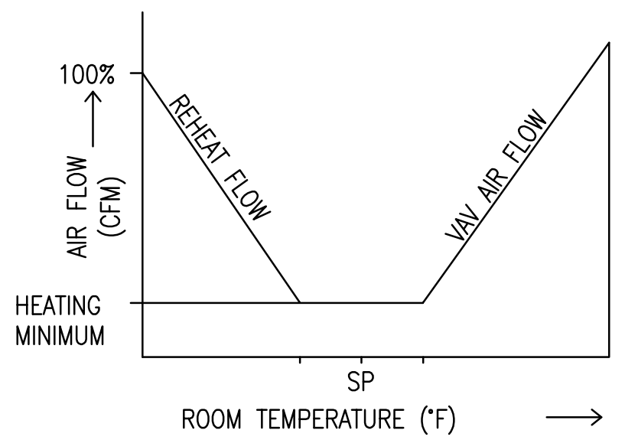
ENERGY CONSERVATION AND ECONOMIZING MODE SHALL BE IMPLEMENTED TO REDUCE ENERGY FOR OFF-HOURS AND MILD WEATHER CONDITIONS.

CONTROL DIAGRAM LEGEND

○	LOCAL CONTROL PANEL (REFER TO THIS DWG AND MI600)
S	SUPERVISORY CONTROL PANEL (SCP-1) (REFER TO MI600)
SPD	LOCAL SYSTEM CONTROL COMPONENT (REFER TO THIS DWG AND MI600)
N	SYSTEM COMPONENT POINT ID NUMBER (FOR MORE SAMPLE POINTS LIST TABLE REFER TO MI600)
----	SIGNAL CABLE BACNET CABLE ETHERNET CABLE

NOTES:

1. HAVEL CONTRACTOR TO INSTALL, TEST AND COMMISSION A FUNCTIONALLY OPERATIVE AND INTEGRATED SYSTEM. ENSURE A WELL FUNCTIONING SYSTEM THAT WOULD PROVIDE ADEQUATE CONTROL OF TEMPERATURE, PRESSURE, HUMIDITY FOR THE RESPECTIVE PLACES.



VAV BOX CONTROL SEQUENCE
W/DEADBAND

A. SET POINTS SHALL BE SET AS FOLLOWS:
COOLING 75°F (ADJ)
HEATING 70°F(ADJ)
DEADBAND OF 5° F BETWEEN HEATING AND COOLING SET POINTS WILL BE MAINTAINED.
B. UPON FALL IN SPACE TEMPERATURE THE VAV DAMPER WILL MODULATE TO MINIMUM POSITION.
C. UPON FURTHER DROP IN SPACE TEMPERATURE VALVE CV-1 WILL MODULATE TO MAINTAIN SET POINT ± .5° F. THE ADJUSTABLE TOLERANCE OF ± .5° F HAS BEEN SELECTED TO PREVENT VALVE HUNTING
D. THE REVERSE SHALL OCCUR ON THE RISE IN SPACE TEMPERATURE.

BIDDING DOCUMENTS
FULLY SPRINKLERED

BIDDING DOCUMENTS	03/27/2013
Revisions:	Date:

VA Northern Indiana
Health Care System,
Fort Wayne
2121 Lake Ave., Fort Wayne
IN 46805

CONSULTANTS:
USFin Development, LLC
1105 West Weir Street
Litchfield, Illinois 62056
Viridian Architectural Design, Inc.
2020 East Washington Blvd., Suite 200
Fort Wayne, Indiana 46803

ARCHITECT/ENGINEERS:
AMERICAN STRUCTUREPOINT INC.
7260 SHADELAND STATION
INDIANAPOLIS, IN 46256-3957
TEL 317.547.5580 FAX 317.543.0270
www.structurepoint.com

EnerTronics
ENERGY TO EXCEL
Engineering Corporation
The Fairmont Building
9245 Calumet Ave. Suite 205,
Munster, IN 46321
(219) 836-2120 Fax (219) 836-1129

Approved: Medical Center Director
NAME: ________________
SIGNATURE: ________________

Approved: Medical Center Associate Director
NAME: ________________
SIGNATURE: ________________

Drawing Title
BASMENT AND 1ST FLOOR HVAC CONTROL DIAGRAMS AND SEQUENCE OF OPERATIONS

Approved: Engineering Service
NAME: ________________ SIGNATURE: ________________

Approved: Project Director
NAME: ________________ SIGNATURE: ________________

Project Title
Renovate First Floor East Wing for PACT

Location
2121 Lake Ave., Fort Wayne, IN 46805

Date: 03/27/2013
Checked: AMH
Drawn: DS

Project Number: 610A4-12-107
Building Number: 01
Drawing Number: MI-601
Dwg. 45 of 58

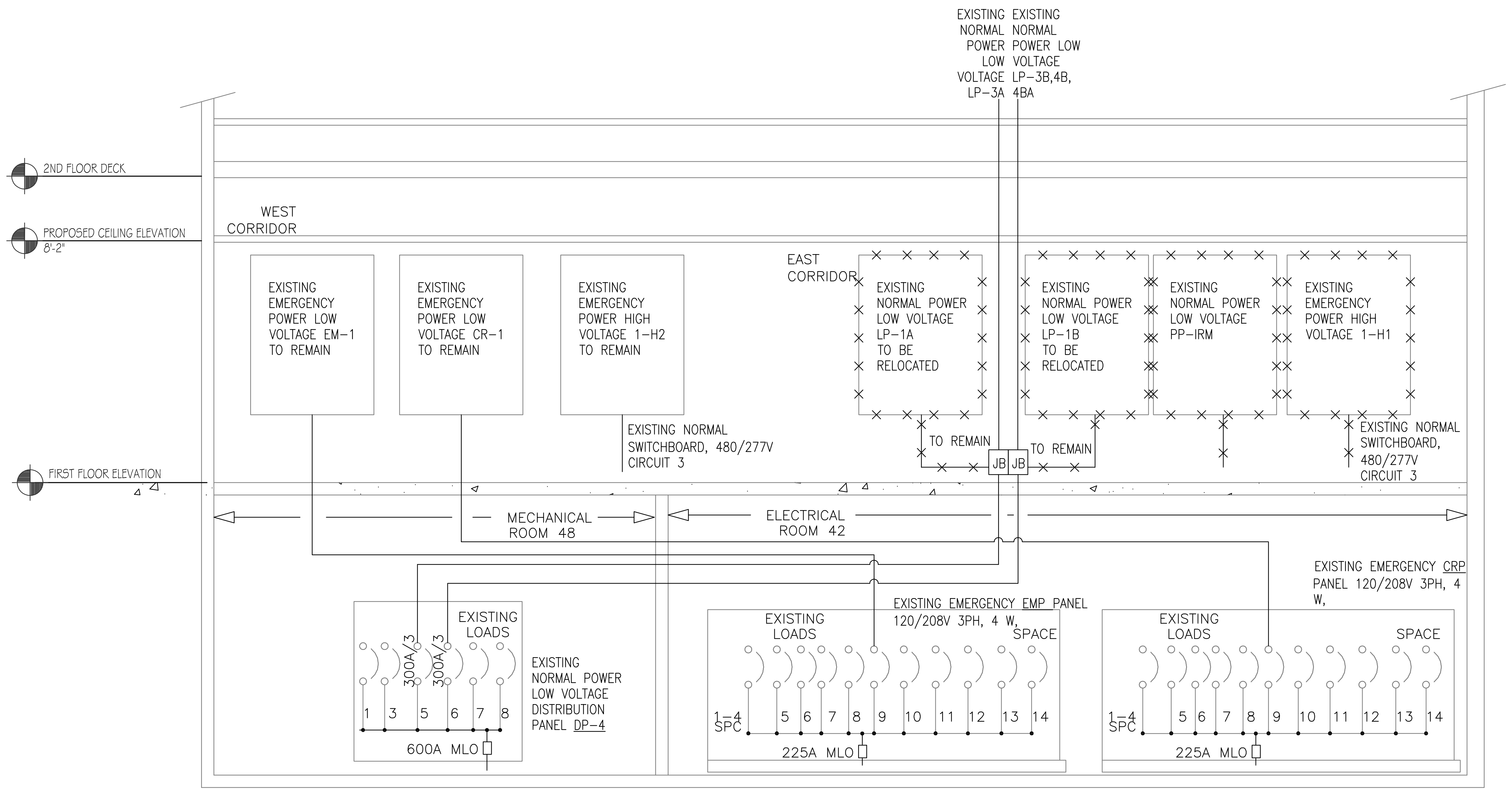
Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231

GENERAL NOTES

1. VERIFY EXISTING CONDITIONS AND EXACT REQUIREMENTS IN FIELD. PROVIDE ALL LABOR AND MATERIAL AS REQUIRED TO ACCOMPLISH THE INTENT AS DEPICTED AND NOTED.
2. FOR EXISTING PANELBOARD LOCATIONS FOR 480v AND 120V, SEE MD-100

TEXT	LINETYPE	LEGEND
EX	———————	EXISTING ELECTRICAL INSTALLATION TO REMAIN
ER	—×—×—×—×—	EXISTING ELECTRICAL INSTALLATION TO BE REMOVED OR REPLACED
	———————	NEW ELECTRICAL 480V CONDUIT AND CABLE
	— L__*–33—	NEW ELECTRICAL 120V CONDUIT AND CABLE
		PANEL LP–(1A OR 1B), CR(1A) 120/208V – C/B DESIGNATION PANEL 1-HE1 – 277/480v – C/B DESINATION
DS		NON-FUSED DISCONNECT SWITCH
JB		JUNCTION BOX
HOA		MANUAL-ON/OFF-AUTOMATIC



1 / ED600 **DEMOLITION ONE LINE DIAGRAM/ RISER DIAGRAM - 120/208V EMERGENCY**

NOT TO SCALE

BIDDING DOCUMENTS
FULLY SPRINKLERED

BIDDING DOCUMENTS	03/27/2013
Revisions:	Date:

VA Northern Indiana
Health Care System,
Fort Wayne
2121 Lake Ave., Fort Wayne
IN 46805

CONSULTANTS:
USFin Development, LLC
1105 West Weir Street
Litchfield
hitectural Design, Inc.
2020 East Washington Blvd., Suite 200
Fort Wayne, Indiana 46803

ARCHITECT/ENGINEERS:
AMERICAN STRUCTUREPOINT INC.
7260 SHADELAND STATION
INDIANAPOLIS, IN 46256-3957
TEL 317.547.5580 FAX 317.543.0270
www.structurepoint.com

EnerTronics ENERGY TO EXCEL
Engineering Corporation
The Fairmont Building
9245 Calumet Ave. Suite 205,
Munster, IN 46321
(219) 836-2120 Fax (219) 836-1129

Approved: Medical Center Director
NAME: _______________
SIGNATURE: _______________

Approved: Medical Center Associate Director
NAME: _______________
SIGNATURE: _______________

Drawing Title
ELECTRICAL POWER ONE LINE SCHEMATIC
RISER DIAGRAM
DEMOLITION

Approved: Engineering Service
NAME: _______________ SIGNATURE: _______________

Approved: Project Director
NAME: _______________ SIGNATURE: _______________

Project Title
Renovate First Floor East Wing for PACT

Location
2121 Lake Ave., Fort Wayne, IN 46805

Date
03/27/2013

Checked
JS

Drawn
DS

Project Number
610A4-12-107

Building Number
01

Drawing Number
ED-600

Dwg. 46 of 58

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231

TEXT	LINETYPE	LEGEND
EX	———	EXISTING ELECTRICAL INSTALLATION TO REMAIN
ER	—×—×—×—×—	EXISTING ELECTRICAL INSTALLATION TO BE REMOVED
	—1—HE1—2—	NEW ELECTRICAL 480V CONDUIT AND CABLE. SEE NOTE 7 – EP–600 PANEL 1–HE1 – 277/480v – C/B DESIGNATION
	--___*–33----	NEW ELECTRICAL 120V CONDUIT AND CABLE. SEE NOTE 7 – EP–600 PANEL LP–(1M, 1A OR 1B), CR(1D) 120/208V – C/B DESIGNATION
DS		NON–FUSED DISCONNECT SWITCH
JB		JUNCTION BOX
VFD		VARIABLE FREQUENCY DRIVE
HOA		MANUAL–ON/OFF–AUTOMATIC

SYMBOL	ITEM	ITEM DESCRIPTION
⊖	**EO-1**	**Duplex Receptacle - Normal**
⊖	**EO-2**	**Duplex Receptacle - Emergency**
⊕ GFI	**EO-3**	**Duplex Receptacle-GFI- Emergency**
⊕ GFI	**EO-4**	**Duplex Receptacle-GFI- Normal**
⊕	**EO-5**	**Quad Receptacle - Normal**
⊕	**EO-6**	**Quad Receptacle - Emergency**
	S-2	**Door operator contact - push pad**

GENERAL NOTES:

1. ELECTRICAL CONTRACTOR TO VERIFY EXISTING LOADS ON THE INDICATED CIRCUIT BREAKER PANELS AND DETERMINE IF ANY NEW LOADS ARE REQUIRED THAT IT WILL NOT EXCEED THE RATING OF EACH PANEL. IF A POTENTIAL OVERLOAD PROBLEM EXISTS, CONTRACTOR IS TO PROVIDE AN ALTERNATE SOLUTION AND SECURE THE APPROVAL OF THE VA ON SITE REPRESENTATIVE.
2. CONTRACTOR IS RESPONSIBLE FOR HIRING A FIRM TO PROVIDE FOR AN UPDATED "ARC FLASH STUDY" IN THIS AREA ONCE NEW ELECTRICAL PANEL WORK IS COMPLETED.
3. ANY SITE MODIFICATION NOT SHOWN ON DRAWINGS SHALL BE MARKED-UP ON AN EXISTING DRAWING. CONTRACTOR SHALL SUBMIT A MARKED UP SET TO THE VA CONTRACTING OFFICERS REPRESENTATIVE (COR) FOR AS-BUILT PURPOSES AT THE CONCLUSION OF THE PROJECT.
4. (1) EACH BRANCH CIRCUIT HOMERUN SHALL HAVE NO MORE THAN THREE CIRCUITS. EACH BRANCH CIRCUIT HOMERUN SHALL HAVE A SEPARATE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR.
5. RECEPTACLES TO BE NEMA 5-20R.
6. EMERGENCY RECEPTACLES, SWITCHES SHALL BE RED COLOR AND FACEPLATES TO BE STAINLESS STEEL, PAINTED RED IN COLOR AND ENGRAVED WITH WHITE LETTERING TO DESIGNATE POWERED FROM EMERGENCY.
7. ALL NORMAL RECEPTACLES AND FACEPLATES SHALL BE STAINLESS STEEL WITH IVORY DEVICES.
8. ELECTRICAL CONTRACTOR TO FIELD VERIFY MOST APPROPRIATE ROUTING OF CONDUIT AND WIRING.
9. ELECTRICAL OUTLETS INSTALLED 18" AFF TO CENTER OF OUTLET WITH GROUND PLUG UP UNLESS OTHERWISE NOTED ON THIS DRAWING OR ARCHITECTURAL ELEVATION DRAWINGS
10. GROUNDING FOR EQUIPMENT TO BE PROVIDED AT THE NEAREST GROUNDING PLATE LOCATION.
11. CONTRACTOR TO PROVIDE A NEW PANEL DESIGNATION FOR EACH PANEL CIRCUIT AND BREAKERS THAT HAVE BEEN MODIFIED.

PLAN NOTES:

① INSTALL NEW RECEPTACLES AS REQUIRED AFTER NEW WALLS ARE INSTALLED.

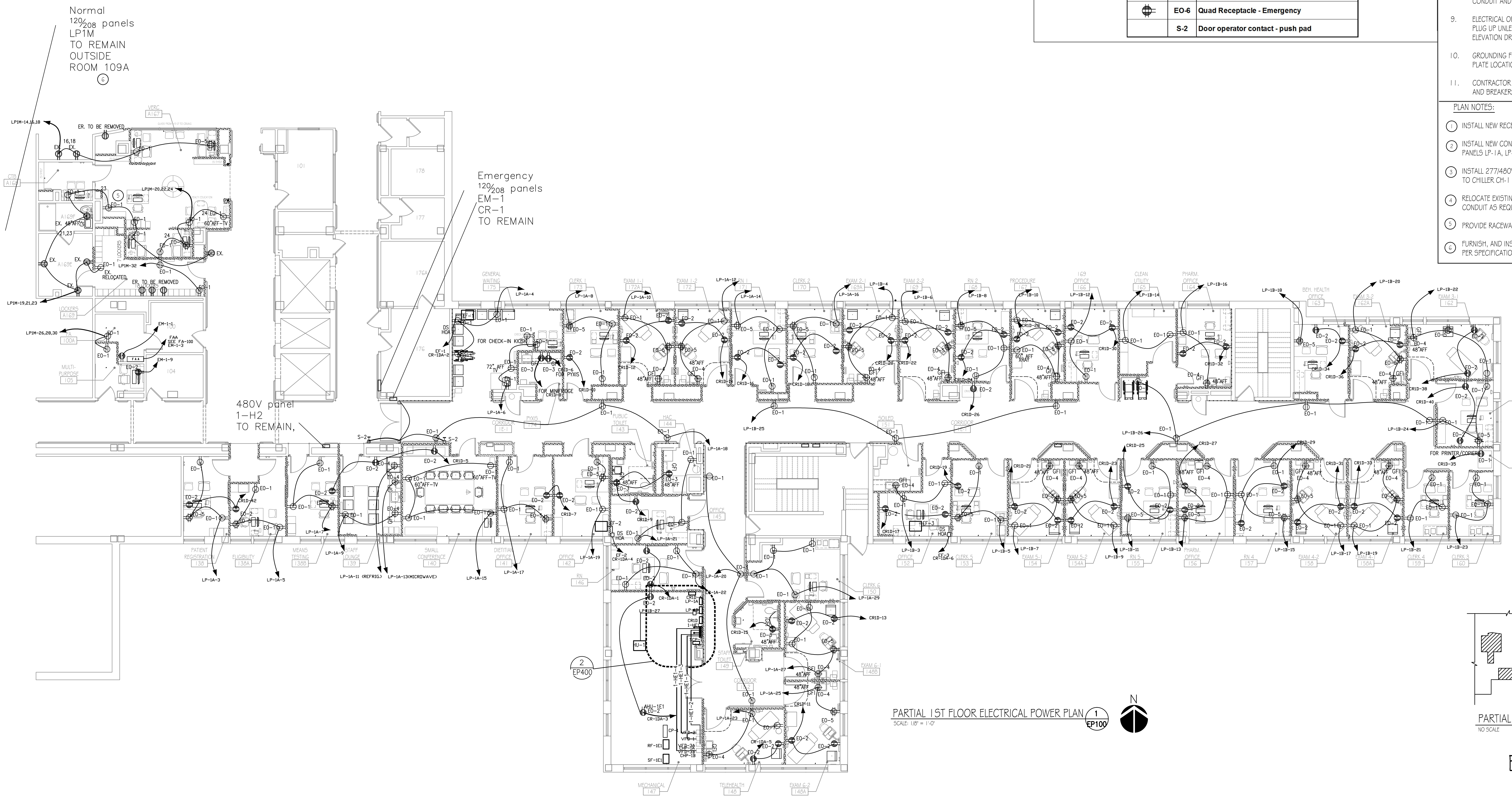
② INSTALL NEW CONDUIT AND CABLE FOR 120V POWER FROM NEW CIRCUIT BREAKERS PANELS LP-1A, LP-1B, CR1D, CR-1DA FOR ROOMS WHERE IT APPLIES. SEE EP-600

③ INSTALL 277/480V POWER FROM PANEL 1-HE1 LOCATED IN ELECTRICAL ROOM 148A TO CHILLER CH-1 LOCATED OUTSIDE NORTH SIDE

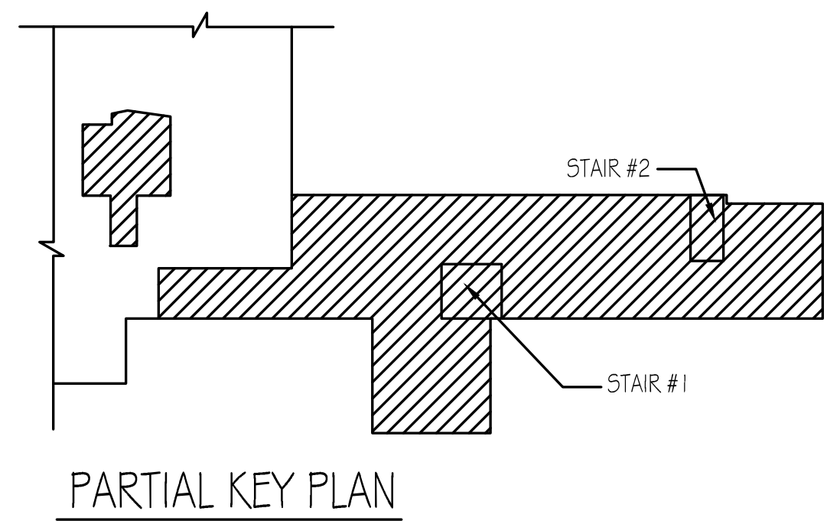
④ RELOCATE EXISTING JUNCTION BOX PANEL AS INDICATED, REROUTING WIRES, CABLE AND CONDUIT AS REQUIRED MAINTAINING CONNECTIONS TO 2ND AND BASEMENT FLOORS.

⑤ PROVIDE RACEWAY WIRE MOLD AND 6FT PLUG STRIP FOR COMPUTER LOCATED IN VERC

⑥ FURNISH, AND INSTALL ANY OTHER ITEM REQUIRED TO COMPLETE THE INTENDED WORK PER SPECIFICATIONS AND DRAWINGS ELSEWHERE.



PARTIAL 1ST FLOOR ELECTRICAL POWER PLAN 1/EP100
SCALE: 1/8" = 1'-0"



PARTIAL KEY PLAN
NO SCALE

BIDDING DOCUMENTS
FULLY SPRINKLERED

Revisions:	Date:
BIDDING DOCUMENTS	03/27/2013

VA Northern Indiana
Health Care System,
Fort Wayne
2121 Lake Ave., Fort Wayne
IN 46805

CONSULTANTS:
USFin Development, LLC
1105 West Weir Street
Litchfield, Illinois 62056
Viridian Architectural Design, Inc.
2020 East Washington Blvd., Suite 200
Fort Wayne, Indiana 46803

ARCHITECT/ENGINEERS:
AMERICAN STRUCTUREPOINT INC.
7260 SHADELAND STATION
INDIANAPOLIS, IN 46256-3957
TEL 317.547.5580 FAX 317.543.0270
www.structurepoint.com

EnerTronics
ENERGY TO EXCEL
Engineering Corporation
The Fairmont Building
9245 Calumet Ave. Suite 205,
Munster, IN 46321
(219) 836-2120 Fax (219) 836-1129

Approved: Medical Center Director
NAME: ________________
SIGNATURE: ________________

Approved: Medical Center Associate Director
NAME: ________________
SIGNATURE: ________________

Drawing Title
ELECTRICAL FLOOR POWER PLAN

Approved: Engineering Service
NAME: ________________ SIGNATURE: ________________

Approved: Project Director
NAME: ________________ SIGNATURE: ________________

Project Title
Renovate First Floor East Wing for PACT

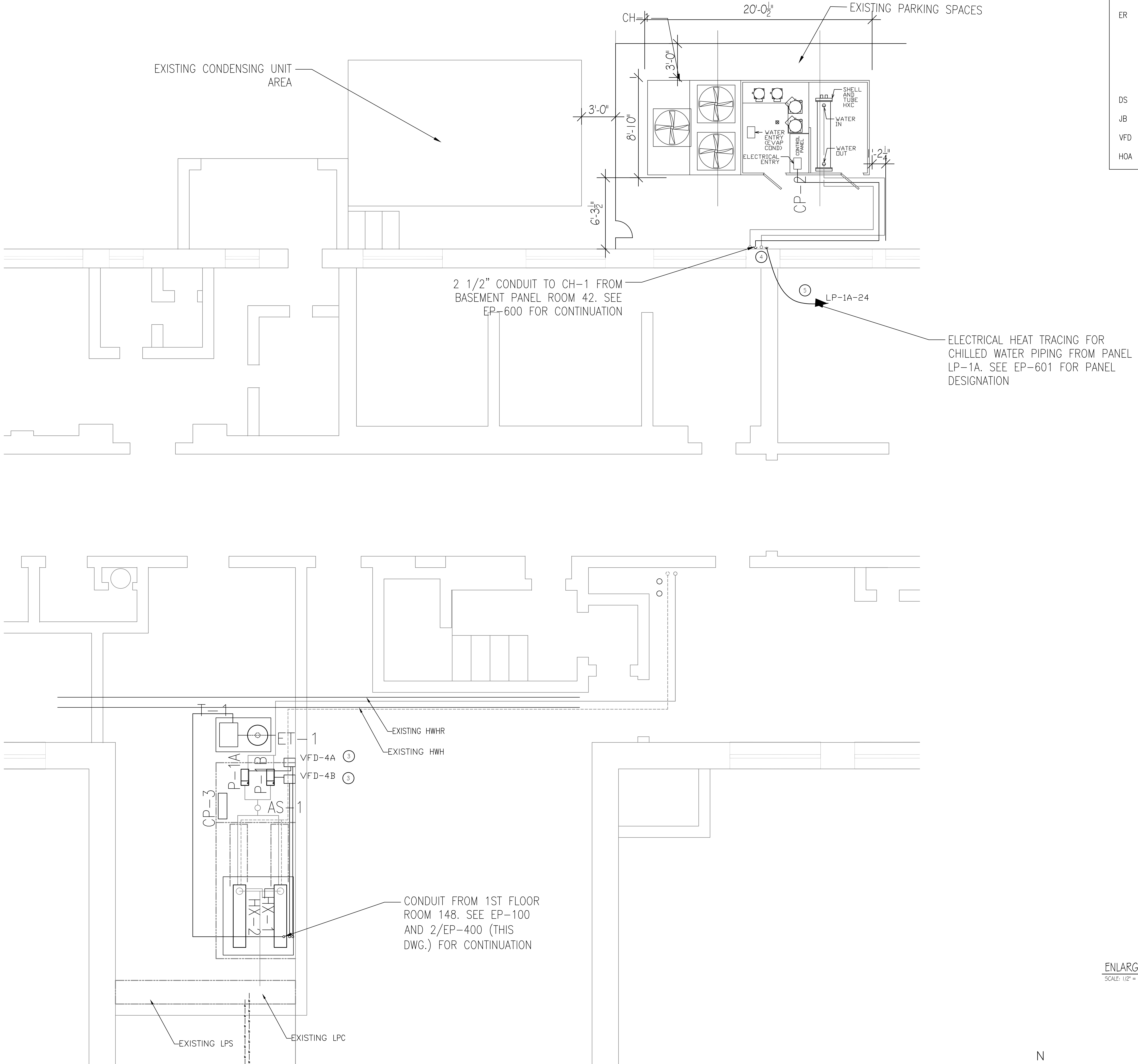
Location
2121 Lake Ave., Fort Wayne, IN 46805

Date 03/27/2013
Checked JS
Drawn DS

Project Number 610A4-12-107
Building Number 01
Drawing Number EP-100
Dwg. 47 of 58

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231



ENLARGED PARTIAL BASEMENT AND OUTSIDE ELECTRICAL POWER PLAN 1/EP400

SCALE: 1/4" = 1'-0"

TEXT	LINETYPE	LEGEND
EX	———	EXISTING ELECTRICAL INSTALLATION TO REMAIN
ER	—×—×—×—×—	EXISTING ELECTRICAL INSTALLATION TO BE REMOVED
	—1—HE1—2—	NEW ELECTRICAL 480V CONDUIT AND CABLE. SEE NOTE 7 – EP-600 PANEL 1-HE1 – 277/480v – C/B DESIGNATION
	--___*—33----	NEW ELECTRICAL 120V CONDUIT AND CABLE. SEE NOTE 7 – EP-600 PANEL LP-(1M, 1A OR 1B), CR(1D) 120/208V – C/B DESIGNATION
DS		NON-FUSED DISCONNECT SWITCH
JB		JUNCTION BOX
VFD		VARIABLE FREQUENCY DRIVE
HOA		MANUAL-ON/OFF-AUTOMATIC

GENERAL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR HIRING A FIRM TO PROVIDE FOR AN UPDATED "ARC FLASH STUDY" IN THIS AREA ONCE NEW ELECTRICAL PANEL WORK IS COMPLETED.
2. ANY SITE MODIFICATION NOT SHOWN ON DRAWINGS SHALL BE MARKED-UP ON AN EXISTING DRAWING. CONTRACTOR SHALL SUBMIT A MARKED UP SET TO THE VA REPRESENTATIVE FOR AS-BUILT PURPOSES AT THE CONCLUSION OF THE PROJECT.
3. ELECTRICAL CONTRACTOR TO FIELD VERIFY MOST APPROPRIATE ROUTING OF CONDUIT AND WIRING.
4. GROUNDING FOR EQUIPMENT TO BE PROVIDED AT THE NEAREST GROUNDING PLATE LOCATION.

PLAN NOTES:

① INSTALL 277/480V POWER FROM PANEL 1-HE1 LOCATED IN MECHANICAL ROOM 147 TO VFD-1 AND VFD-2 FOR AHU-1E1 LOCATED IN ROOM 147.

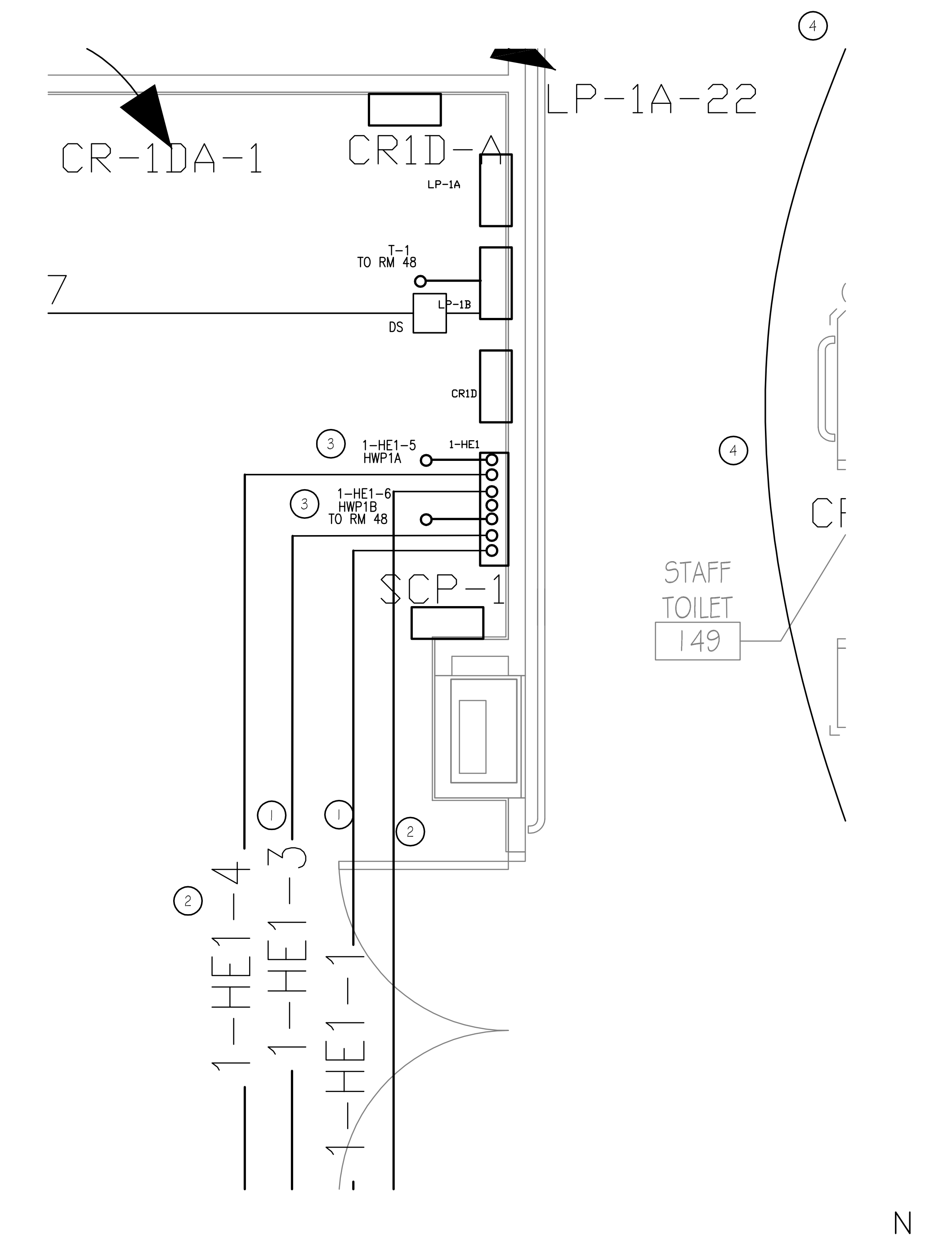
② INSTALL 277/480V POWER FROM PANEL 1-HE1 LOCATED IN MECHANICAL ROOM 147 TO VFD-3A AND B FOR CHILLED WATER PUMPS LOCATED IN ROOM 147.

③ INSTALL 277/480V POWER FROM PANEL 1-HE1 LOCATED IN MECHANICAL ROOM 147 TO VFD-4A AND B FOR HOT WATER HEATING PUMPS LOCATED IN MECHANICAL ROOM 48

④ INSTALL 277/480V POWER FROM NORMAL EXISTING DISTRIBUTION LOCATED IN ELECTRICAL ROOM 42 TO CHILLER CH-1 LOCATED OUTSIDE NORTH SIDE.

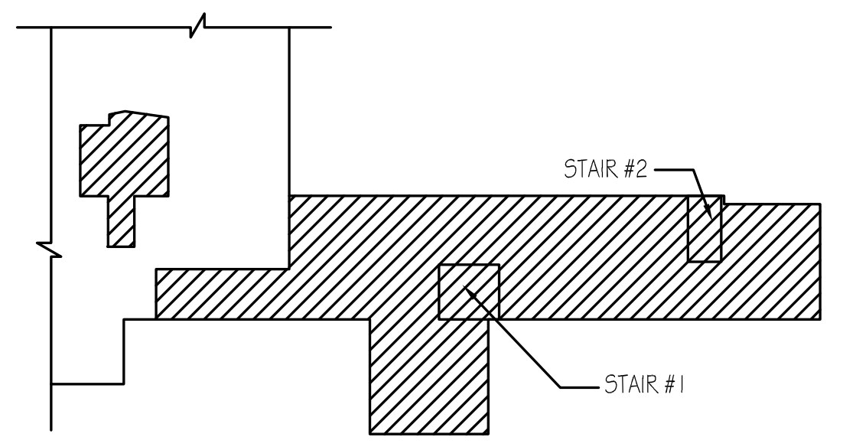
⑤ INSTALL 120V POWER FROM NORMAL PANEL LOCATED IN MECHANICAL ROOM 147 TO ELECTRICAL HEAT TRACING OF CHILLED WATER PIPING TO CH-1 LOCATED OUTSIDE NORTH SIDE.

⑥ FURNISH, AND INSTALL ANY OTHER ITEM REQUIRED TO COMPLETE THE INTENDED WORK PER SPECIFICATIONS AND DRAWINGS ELSEWHERE.



ENLARGED MECHANICAL ROOM 148 POWER PLAN 2/EP400

SCALE: 1/2" = 1'-0"



PARTIAL KEY PLAN

NO SCALE

BIDDING DOCUMENTS
FULLY SPRINKLERED

BIDDING DOCUMENTS	03/27/2013
Revisions:	Date:

VA Northern Indiana
Health Care System,
Fort Wayne
2121 Lake Ave., Fort Wayne
IN 46805

CONSULTANTS:

USFin Development, LLC
1105 West Weir Street
Litchfield, Illinois 62056

Viridian Architectural Design, Inc.
2020 East Washington Blvd., Suite 200
Fort Wayne, Indiana 46803

ARCHITECT/ENGINEERS:

AMERICAN STRUCTUREPOINT INC.
7260 SHADELAND STATION
INDIANAPOLIS, IN 46256-3957
TEL 317.547.5580 FAX 317.543.0270
www.structurepoint.com

EnerTronics
ENERGY TO EXCEL
Engineering Corporation
The Fairmont Building
9245 Calumet Ave. Suite 205,
Munster, IN 46321
(219) 836-2120 Fax (219) 836-1129

Approved: Medical Center Director
NAME: ________________
SIGNATURE: ________________

Approved: Medical Center Associate Director
NAME: ________________
SIGNATURE: ________________

Drawing Title
ENLARGED ELECTRICAL BASEMENT, OUTSIDE AND 1ST FLOOR POWER PLANS

Approved: Engineering Service
NAME: ________________ SIGNATURE: ________________

Approved: Project Director
NAME: ________________ SIGNATURE: ________________

Project Title
Renovate First Floor East Wing for PACT

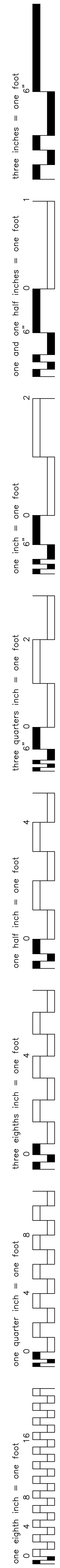
Location
2121 Lake Ave., Fort Wayne, IN 46805

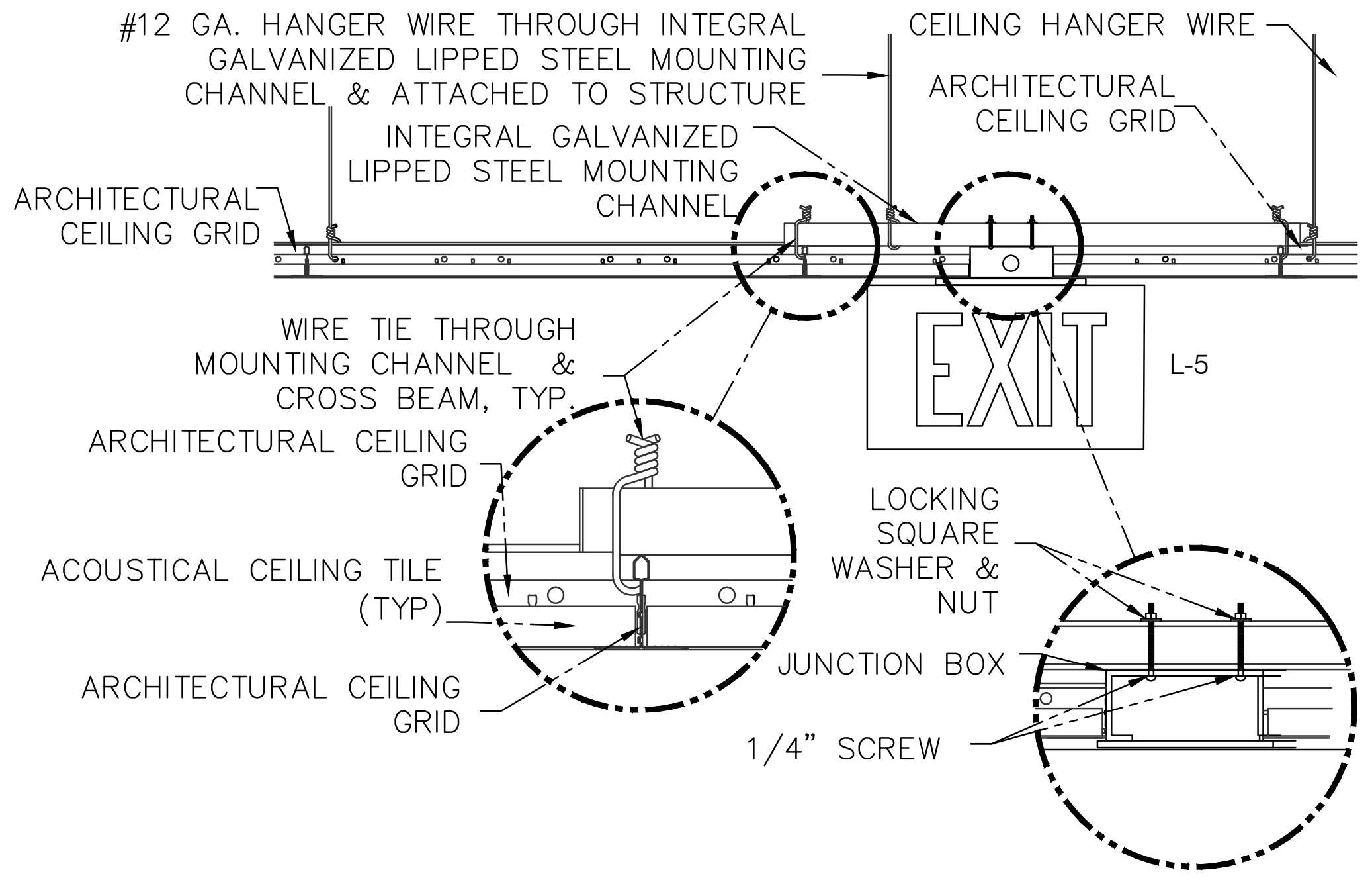
Date: 03/27/2013
Checked: JS
Drawn: DS

Project Number: 610A4-12-107
Building Number: 01
Drawing Number: EP-400
Dwg. 48 of 58

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231



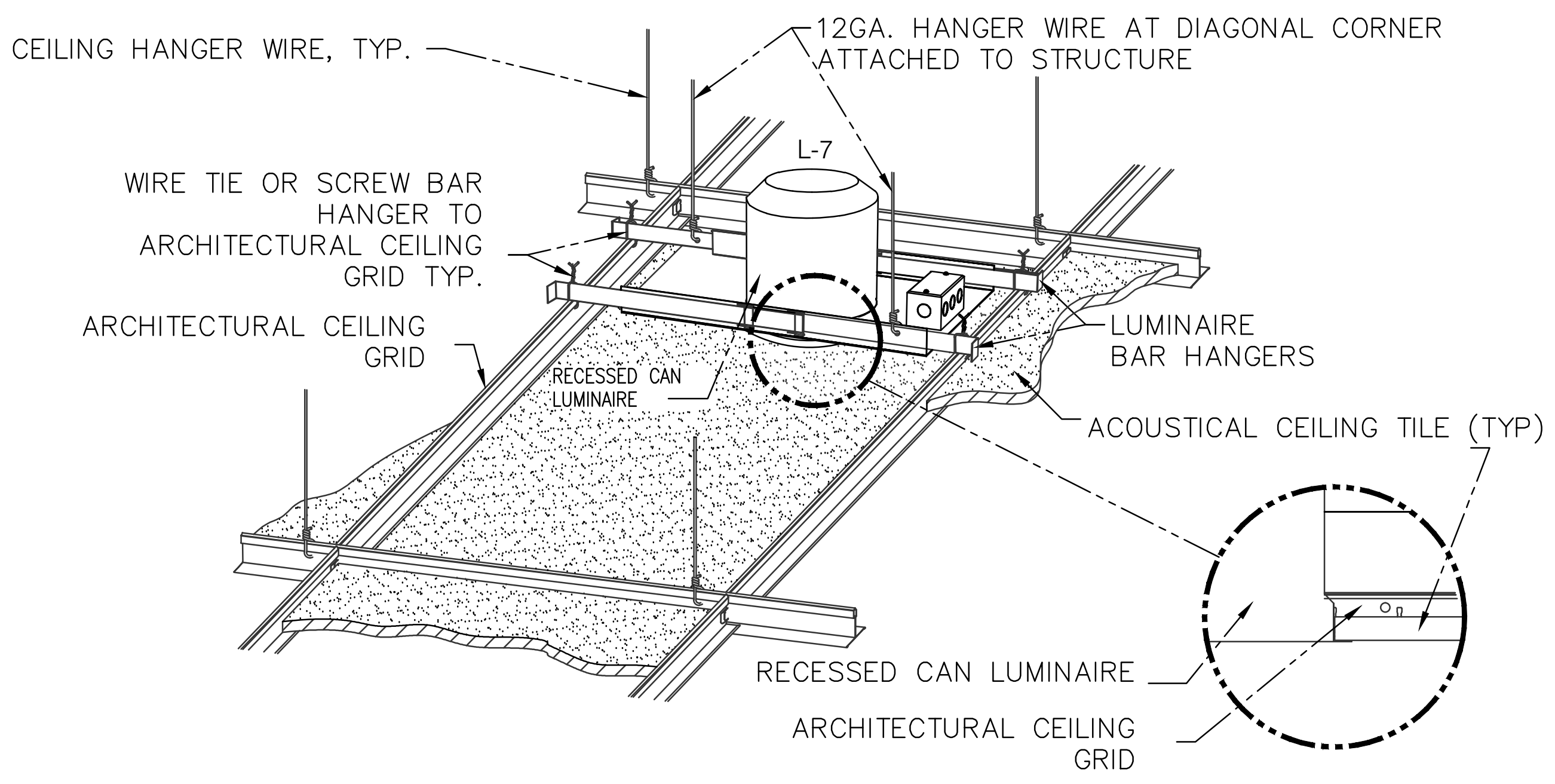


EXIT SIGN MOUNTING- LAY-IN CEILING DETAIL

SCALE: NTS

REFERENCE EL-100

3
EP-500

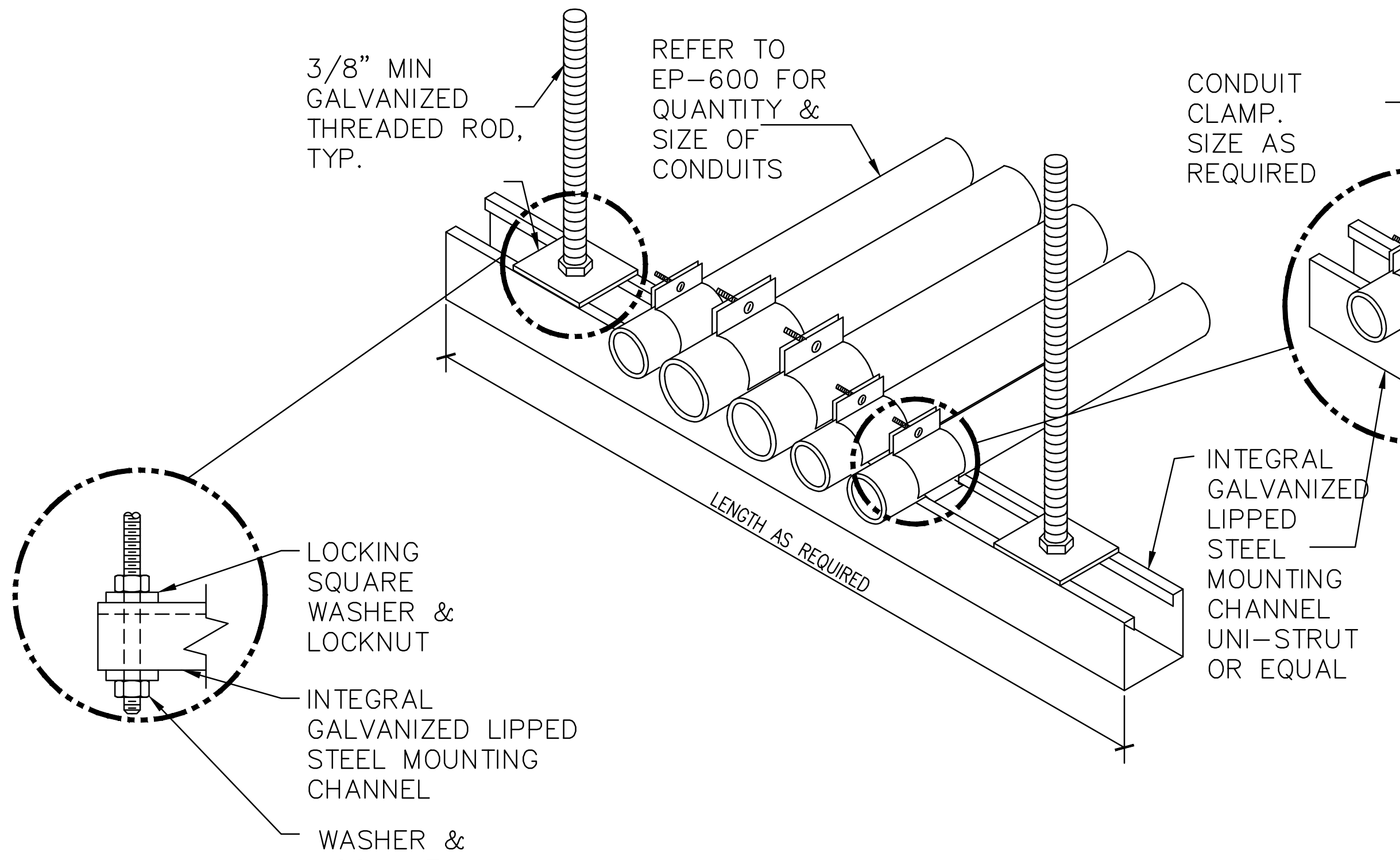


DOWNLIGHT MOUNTING - LAY-IN CEILING DETAIL

SCALE: NTS

REFERENCE EL-100

5
EP500



NOTES

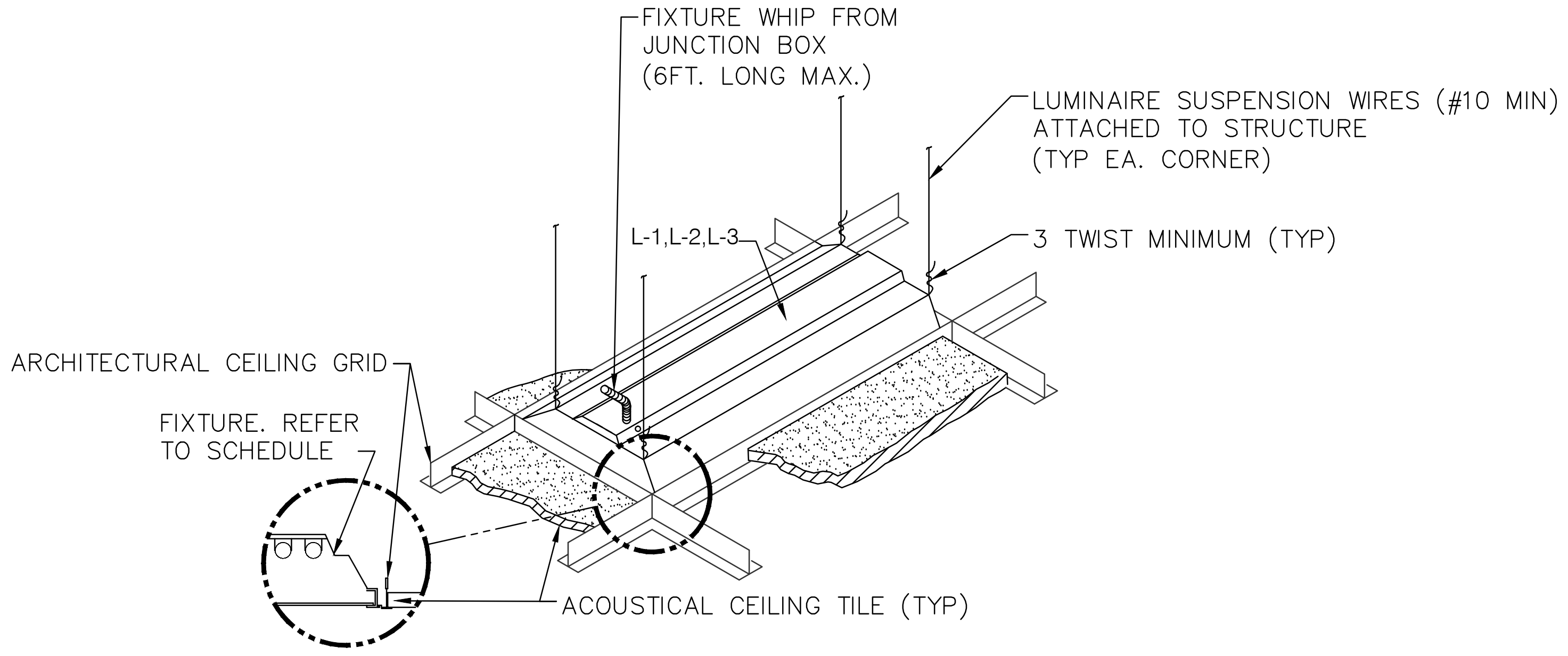
1. METAL CHANNEL STRUT SUPPORT LONGER THAN THAN 36" SHALL BE INSTALLED WITH A CENTER SUPPORT ROD.
2. FASTEN THREADED ROD TO STRUCTURE BY APPROVED METHOD PER SPECIFICATION 26 05 33, RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS. FIELD VERIFY EXACT CONDITIONS.

CONDUIT TRAPEZE MOUNTING DETAIL

SCALE: NTS

REFERENCE EP-100,400

2
EP-500

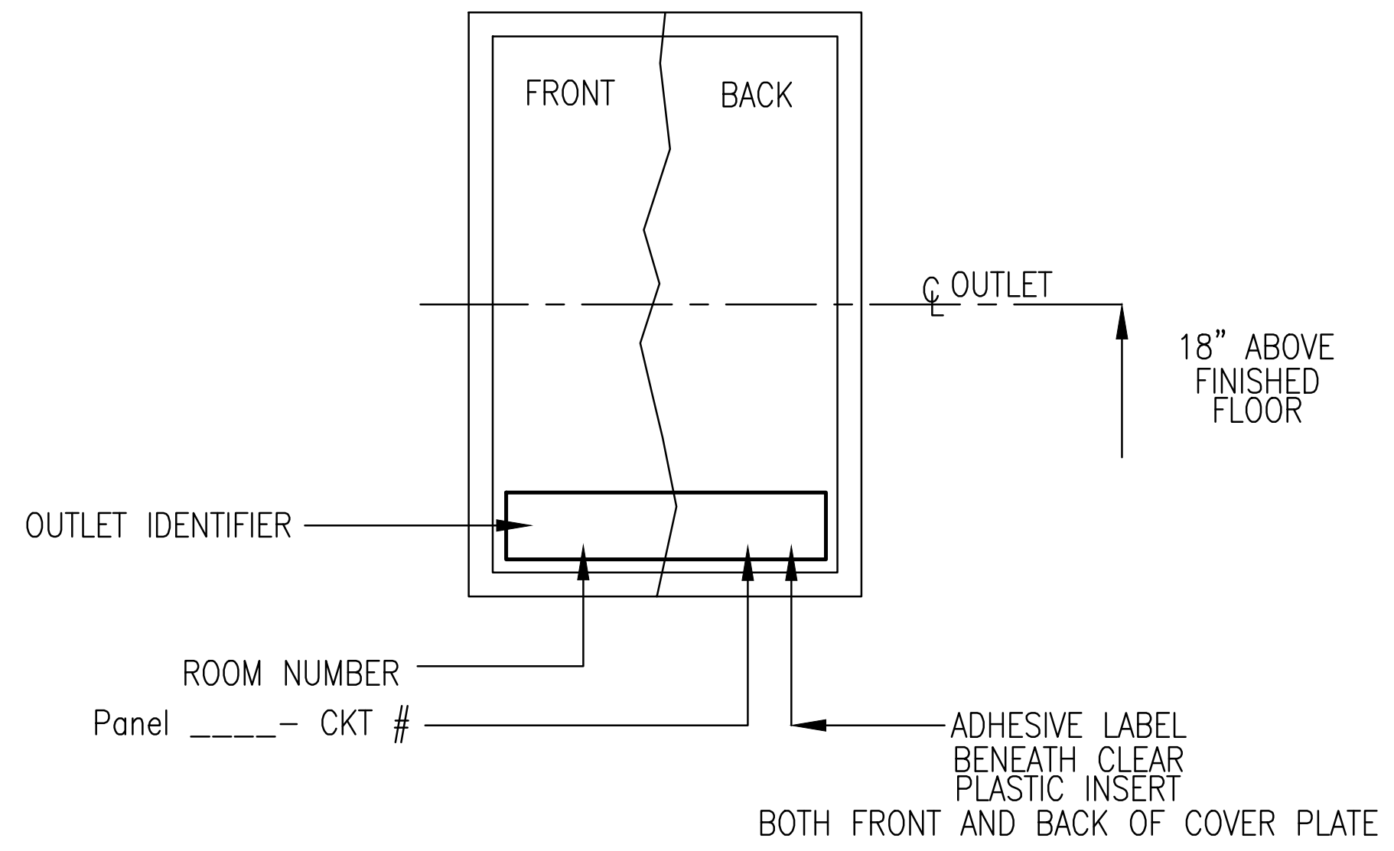


LAY-IN FIXTURE SUPPORT DETAIL

SCALE: NTS

REFERENCE EL-100

4
EP500



ELECTRICAL OUTLET COVER PLATE DETAIL

SCALE: NTS

REFERENCE EP-100

1
EP-500

1. CONTRACTOR TO WIRE EACH OUTLET TO A DESIGNATED CIRCUIT BREAKER PANEL AND USE THE IDENTIFIER LABEL TO ASSOCIATE WITH A CIRCUIT BREAKER. SEE PLAN EP-100.
2. ALL COMPONENTS SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR FOR A COMPLETE SYSTEM.
3. PROVIDE ONE GANG BOX PER OUTLET.
4. SEE EP-600 FOR ADDITIONAL WIRING AND LABELING NOTES.

BIDDING DOCUMENTS
FULLY SPRINKLERED

BIDDING DOCUMENTS	03/27/2013
Revisions:	Date:

VA Northern Indiana
Health Care System,
Fort Wayne
2121 Lake Ave., Fort Wayne
IN 46805

CONSULTANTS:

USFin Development, LLC
1105 West Weir Street
Litchfield, Illinois 62056

Viridian Architectural Design, Inc.
2020 East Washington Blvd., Suite 200
Fort Wayne, Indiana 46803

ARCHITECT/ENGINEERS:

AMERICAN
STRUCTUREPOINT
INC.
7260 SHADELAND STATION
INDIANAPOLIS, IN 46256-3957
TEL 317.547.5580 FAX 317.543.0270
www.structurepoint.com

EnerTronics
ENERGY TO EXCEL
Engineering Corporation
The Fairmont Building
9245 Calumet Ave. Suite 205,
Munster, IN 46321
(219) 836-2120 Fax (219) 836-1129

Approved: Medical Center Director
NAME: ______________
SIGNATURE: ______________

Approved: Medical Center Associate Director
NAME: ______________
SIGNATURE: ______________

Drawing Title
ELECTRICAL POWER AND LIGHTING DETAILS

Approved: Engineering Service
NAME: ________________ SIGNATURE: ______________

Approved: Project Director
NAME: ________________ SIGNATURE: ______________

Project Title
Renovate First Floor East Wing
for PACT

Location
2121 Lake Ave., Fort Wayne, IN 46805

Date	Checked	Drawn
03/27/2013	JS	DS

Project Number
610A4-12-107

Building Number
01

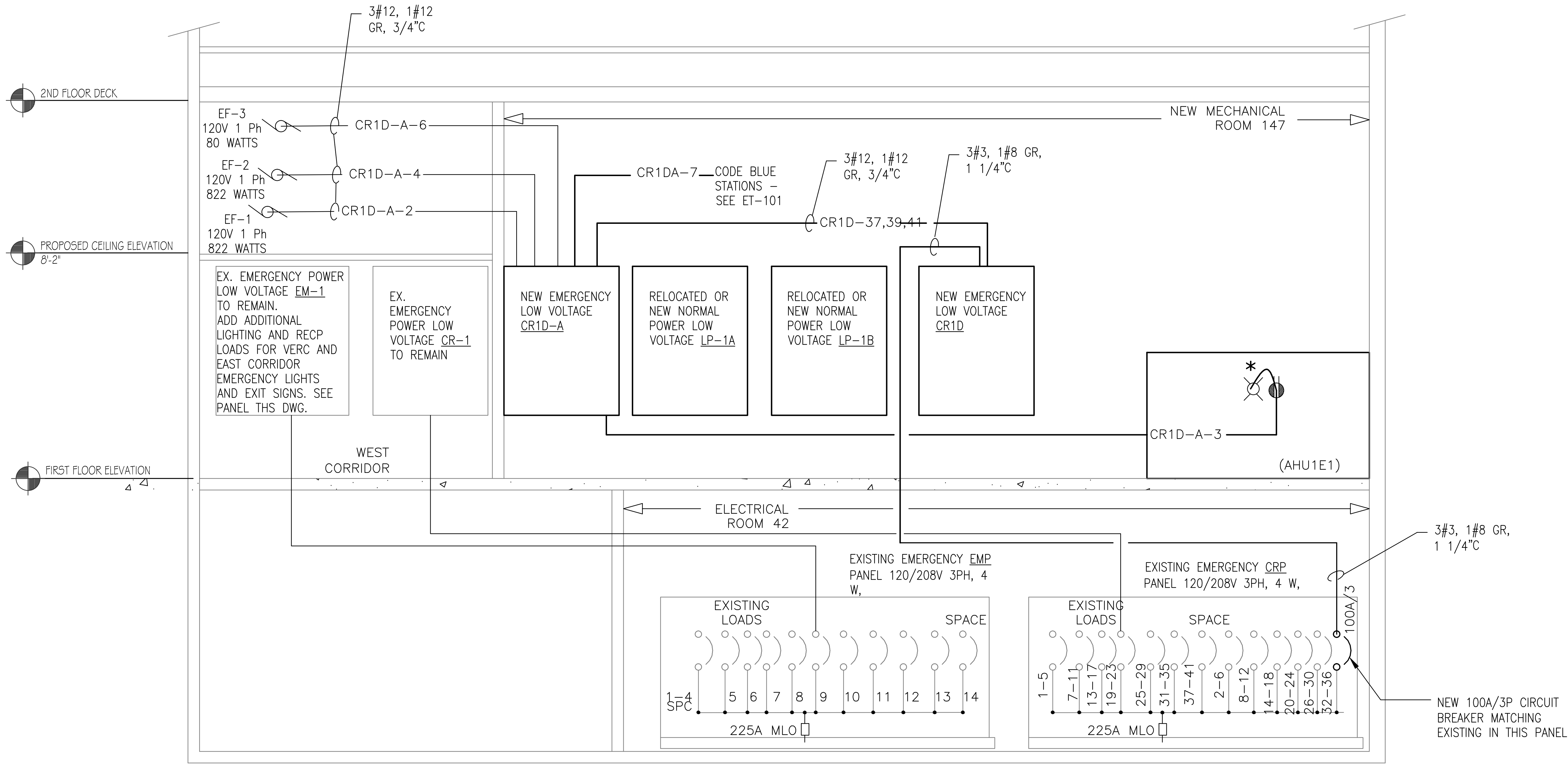
Drawing Number
EP-500

Dwg. 49 of 58

Office of
Construction
and Facilities
Management

Department of
Veterans Affairs

VA FORM 08-6231



3
EP600

BASEMENT AND 1ST FLOOR ONE LINE DIAGRAM/ RISER DIAGRAM - 120/208V EMERGENCY

NOT TO SCALE

EXISTING PANEL EM-1 CIRCUIT MODIFICATIONS

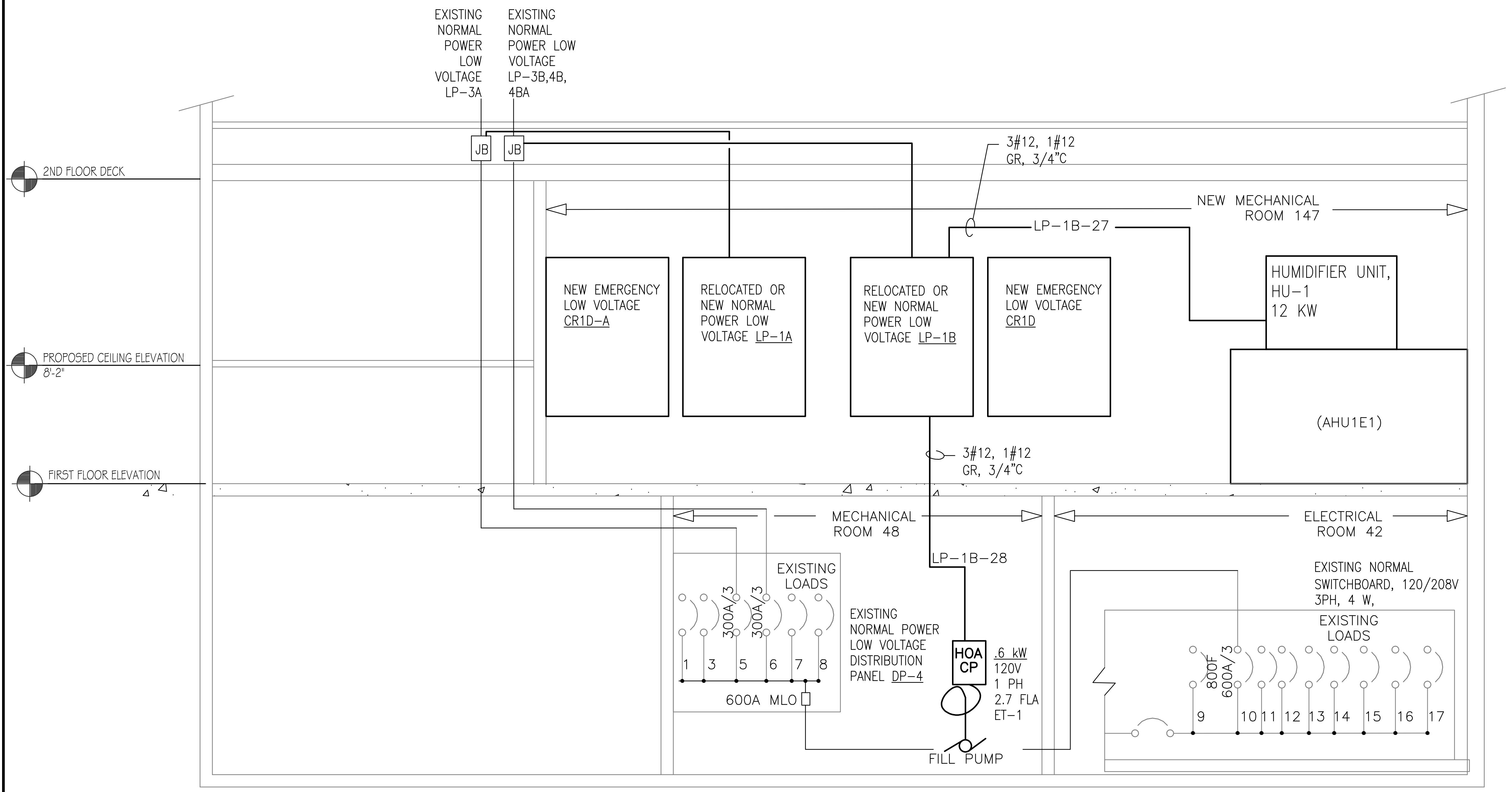
EXISTING EMERGENCY PANEL EM-1, 120/208V, 3 PH, 4 WIRE, 100 A, COPPER BUS WITH 100A MAIN CIRCUIT BREAKER. BOLT ON CIRCUIT BREAKERS. RECESSED MOUNTED.

Ckt No.	Room #	Ckt breaker rating/ Pole	Connected Load VA A	Connected Load VA B	Connected Load VA C	Ckt breaker rating/ Pole	Room #	Ckt No.
1	R: RM 105, Note 2	20/1					Ex. Corridor L - South	
			Note 1			20/1		2
3	Ex. Simplex Fire city fire call	20/1		Note 1			Exit L	
				Note 1		20/1		4
5	Ex. L: Lobby	20/1			Note 1		Ex. Radiology Load	
					Note 1	20/1		6
7	L: Rooms 105, 101A, Note 2	20/1	Note 1				Ex. Lts 101, lobby	
			132			20/1		8
9	R: RM 105, 101A, Note 2	20/1		400			Ex. R, L-Lobby	
				Note 1		20/1		10
11	Ex. Damper motors and smoke alarm duct	20/1			Note 1		Corridor New L - East and Ex. L - West, Note 2	
					402	20/1		12
13	Blank		----			100/3	Ex. Main	
			Note 1					14
15	Ex. L: Pharm	20/1		Note 1				
				Note 1				16
17	Ex. R: Pharm	20/1			Note 1			
					Note 1			18
			132	400	402			
			934					
PHASE A	0.132	KVA	TOTAL LOAD		0.93	KVA		
PHASE B	0.4	KVA	TOTAL DEMAND			KVA		
PHASE C	0.40	KVA	LOAD					
NOTES								
Note 1:	Retain existing feeds and loads							
Note 2:	Contractor to verify and isolate any additional loads on this circuit that may have not been shown							
L: Lights								
R: Receptacles								

GENERAL NOTES

1. VERIFY EXISTING CONDITIONS AND EXACT REQUIREMENTS IN FIELD. PROVIDE ALL LABOR AND MATERIAL AS REQUIRED TO ACCOMPLISH THE INTENT AS DEPICTED AND NOTED.
2. FOR 480v AND 120V FEEDS FROM PANELS LOCATED IN ELECTRICAL ROOM 148A REFER TO PANEL SCHEDULE EP-601
3. ∗ INDICATES SUPPLIED BY MANUFACTURER
4. ⊗ INDICATES LAMP
5. MECHANICAL INSTALLATION/COMMISSIONING CONTRACTOR SHALL FEED 120V POWER TO CONTROL PANELS FROM DESIGNATED POWER SOURCES AS INDICATED ON THIS AND MECHANICAL DRAWINGS. VERIFY WITH ELECTRICAL CONTRACTOR TO THE EXTENT OR REQUIREMENTS AS STATED IN THE LATEST NEC 2011.
6. FOR VFD EQUIPMENT SELECTIONS SEE MH-602
7. FOR A COMPLETE INSTALLATION SHOWN ON THIS DRAWING AND IN THE ELECTRICAL PLANS AND DETAILS ELSEWHERE, CONTRACTOR SHALL FOLLOW WIRING AND LABELING DESIGNATIONS AS INDICATED BELOW:
   - 7.1. WIRE COLOR CODE: 120/208V
     - 7.1.1. A PHASE = BLACK
     - 7.1.2. B PHASE = RED
     - 7.1.3. C PHASE = BLUE
     - 7.1.4. N = WHITE
     - 7.1.5. G = GREEN
   - 7.2. WIRE COLOR CODE: 277/480V
     - 7.2.1. A PHASE = BROWN
     - 7.2.2. B PHASE = ORANGE
     - 7.2.3. C PHASE = YELLOW
     - 7.2.4. N = GRAY OR WHITE
     - 7.2.5. G = GREEN
   - 7.3. ALL WIRES NUMBERED AT DEVICES AND AT J-BOXES AND AT BREAKERS.
   - 7.4. ALL DEVICES LABELED WITH "PANEL – CIRCUIT" NUMBER. SEE DETAIL 1 – EP-500.
   - 7.5. ALL DEVICE COVERS LABELED ON FRONT AND BACK SIDE WITH "PANEL-CIRCUIT" NUMBER. SEE DETAIL 1 – EP-500.
   - 7.6. ALL J-BOX COVERS LABELED WITH PANEL & CIRCUIT ON OUTSIDE AND INSIDE J-BOX COVER. SEE EP-100.
   - 7.7. ALL PANELS LABELED ON OUTSIDE. SEE THIS DWG AND EP-601.
   - 7.8. ALL PANEL LEDGERS COMPLETED & COPY GIVEN TO COR TO UPDATE OUR DATABASE. SEE THIS DWG AND EP-601.

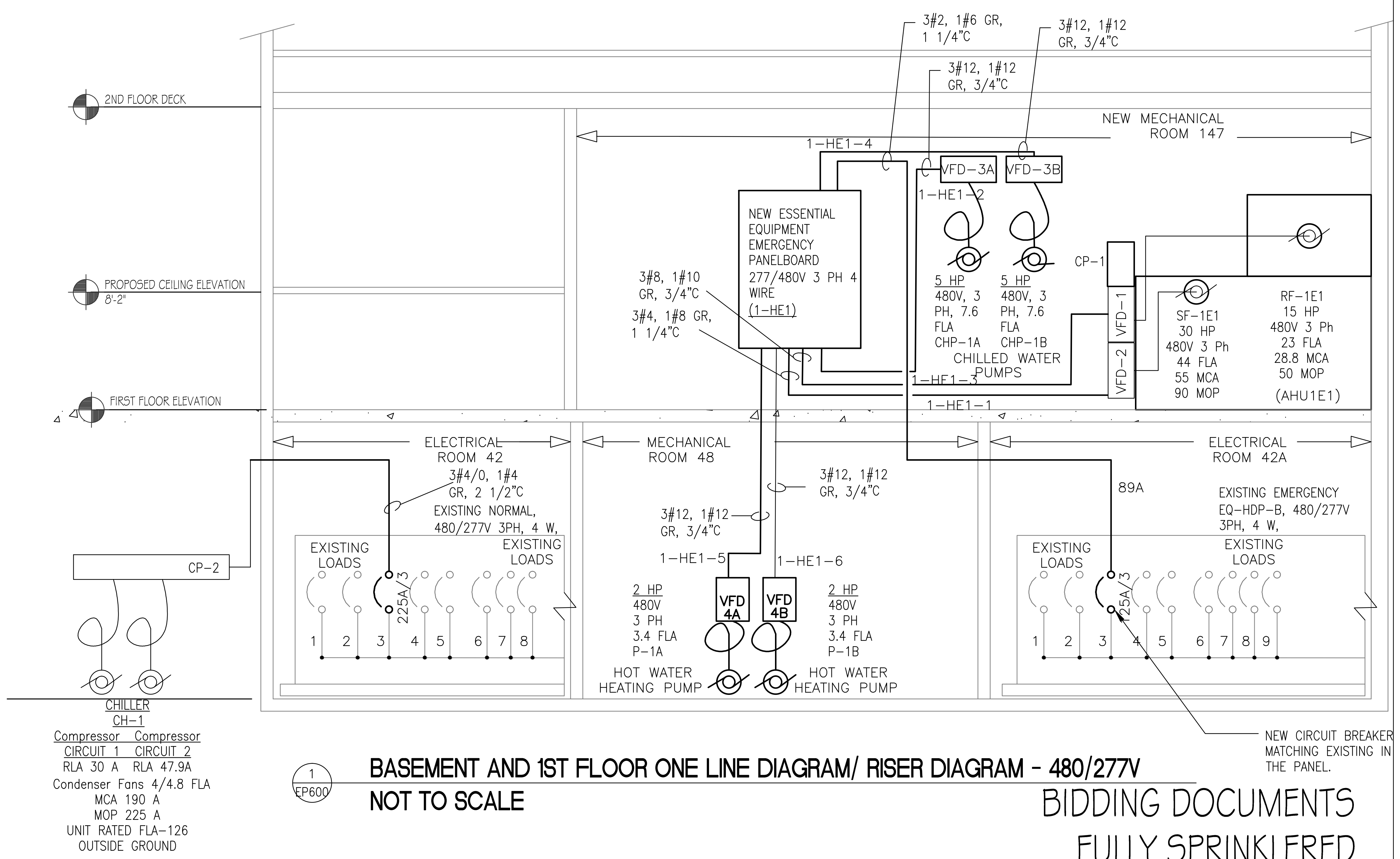
TEXT	LINETYPE	LEGEND
EX	———	EXISTING ELECTRICAL INSTALLATION TO REMAIN
ER	—×—×—×—×—	EXISTING ELECTRICAL INSTALLATION TO BE REMOVED
		NEW ELECTRICAL 480V CONDUIT AND CABLE
	— L__*—33—	NEW ELECTRICAL 120V CONDUIT AND CABLE
		PANEL LP-(1A OR 1B), CR(1D) 120/208V – C/B DESIGNATION PANEL 1-HE1 – 277/480v – C/B DESIGNATION
DS		NON-FUSED DISCONNECT SWITCH
JB		JUNCTION BOX
HOA		MANUAL-ON/OFF-AUTOMATIC



2
EP600

BASEMENT AND 1ST FLOOR ONE LINE DIAGRAM/ RISER DIAGRAM - 120/208V NORMAL

NOT TO SCALE



1
EP600

BASEMENT AND 1ST FLOOR ONE LINE DIAGRAM/ RISER DIAGRAM - 480/277V

NOT TO SCALE

BIDDING DOCUMENTS
FULLY SPRINKLERED

Revisions:	Date:
BIDDING DOCUMENTS	03/27/2013

VA Northern Indiana
Health Care System,
Fort Wayne
2121 Lake Ave., Fort Wayne
IN 46805

CONSULTANTS:

USFin Development, LLC
1105 West Weir Street
Litchfield, Illinois 62056

Viridian Architectural Design, Inc.
2020 East Washington Blvd., Suite 200
Fort Wayne, Indiana 46803

ARCHITECT/ENGINEERS:

AMERICAN STRUCTUREPOINT INC.
7260 SHADELAND STATION
INDIANAPOLIS, IN 46256-3957
TEL 317.547.5580 FAX 317.543.0270
www.structurepoint.com

EnerTronics
ENERGY TO EXCEL
Engineering Corporation
The Fairmont Building
9245 Calumet Ave. Suite 205,
Munster, IN 46321
(219) 836-2120 Fax (219) 836-1129

Approved: Medical Center Director
NAME: ________________
SIGNATURE: ________________

Approved: Medical Center Associate Director
NAME: ________________
SIGNATURE: ________________

Drawing Title
ELECTRICAL POWER ONE LINE SCHEMATIC
RISER DIAGRAM
BASEMENT AND 1ST FLOOR

Approved: Engineering Service
NAME: ________________ SIGNATURE: ________________

Approved: Project Director
NAME: ________________ SIGNATURE: ________________

Project Title
Renovate First Floor East Wing
for PACT

Location
2121 Lake Ave., Fort Wayne, IN 46805

Date
03/27/2013

Checked
JS

Drawn
DS

Project Number
610A4-12-107

Building Number
01

Drawing Number
EP-600

Dwg. 50 of 58

Office of
Construction
and Facilities
Management

Department of
Veterans Affairs

VA FORM 08-6231